Santa Clara Valley
Water District

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ALVISO SLOUGH RESTORATION PROJECT

PERMITS FOR THE LOWER GUADALUPE RIVER FLOOD PROTECT ION PROJECT

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California Regional Water Quality Control Board
San Francisco Bay Region

Alan C. Lloyd, Ph.D.
Agency Secretary

1515 Clay Street, Suite 1400, Oakland, California 94612
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Arnold Schwarzenegger
Governor

2 letters pg

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PROJECT FILE

Date: MAR 16 2005
File No. 2188.07 (PFA)
Order No. R2-2002-0089

Mr. Dave Chesterman
Guadalupe Watershed Manager
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

SUBJECT: Extension of Waste Discharge Requirements From 2004 to 2006 for the Santa Clara Valley Water District, Lower Guadalupe River Flood Protection Project, City of San Jose

Dear Mr. Chesterman:

The San Francisco Bay Regional Water Quality Control Board (Water Board) has received your request, on behalf of the Santa Clara Valley Water District (District), to extend the construction work window for the Lower Guadalupe River Flood Protection Project (Project) from October 15, 2004 to October 15, 2006. By way of this letter, the District is hereby granted a two-year extension for the Project, which will end October 15, 2006. All other findings and provisions adopted under Order R2-2002-0089 still apply. In your request for an extension, you have outlined the following activities to occur:

1. Route 237 Eastbound Bridge Replacement: The bridge construction is a 2-year construction project with half of the new bridge to be built in each construction season. Due to design and coordination with Caltrans (Route 237 is a Caltrans bridge), construction was delayed in 2004. It is anticipated that the Bridge will be completed by May 2006.

   Activities to be completed include:
   - Complete the remaining in channel levees and ramps;
   - Complete the remaining floodwalls and retaining walls;
   - Install piles, construct abutments, and complete the remaining half of the new bridge;
   - Complete the remaining highway approaches;
   - Relocate the 12-inch water line running along the Route 237 alignment;
   - Complete landscaping for the soundwall.

2. Flood Protection Improvements along the Guadalupe River Between Alviso Marina and Interstate 880 include:

- Complete the slope protection and maintenance ramps at Highway 101. Due to the Caltrans Highway 101 widening project, the District did not have access for construction underneath Highway 101 in 2004;
- Complete the slope protection and maintenance ramps on the west side at Airport Parkway Bridge. Due to the Caltrans Highway 101 widening project (which had prevented access through Highway 101 to the Airport Parkway Bridge) and lack of funding, this work could not be completed in 2004;
- Complete mitigation planting on the west bank between Highway 101 and Trimble Road. Due to the presence of a 3-foot thick clay layer at the site, the District had to over excavate before planting. The additional excavation was completed in October 2004 and planting is expected to proceed in fall 2005;
- Complete mitigation planting on the east bank upstream of Highway 101. Due to the Caltrans Highway 101 widening project, the District did not have access to complete the flood protection work and the mitigation planting in this area. Mitigation is expected to proceed in fall 2005 after the channel work is completed in October 2005;
- Various repairs or correction of levees, floodwalls, retaining walls that were completed in 2004;
- Complete the excavation of sediment adjacent to the overflow weir at Pond A8. Due to the presence of potential hazardous materials, additional time was needed to collect soil samples for chemical analyses and to negotiate with various landfills for acceptance of the excavated soils. The District was only able to construct the overflow weir by October 30, 2004. The District will have to collect soil samples in the sediment removal area and negotiate with various landfills for acceptance of the excavated sediments before work can proceed. Additional sediment excavation at the weir location will have to be completed between June and October 2005.

Please be aware that this extension only applies to the activities described above and that it does not allow the District to conduct any Project activities that were not previously approved by Order R2-2002-0089. If you have any question regarding this letter, please contact Paul Amato of my staff at (510) 622-2429, or via e-mail at pfamato@waterboards.ca.gov.

Sincerely,

Bruce H. Wolfe
Executive Officer

Cc:
Mr. Kent Aue, CDFG
Ms. Luisa Valiela, USEPA-Region IX
Mr. Robert Smith, USACE - Regulatory

California Regional Water Quality Control Board
San Francisco Bay Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

Serge Stanich
CC: T. Neudorf
D. VonRueden
S. Centennial
File

Date: SEP 2 6 2002
Site No.: 02-43-C0395
File No.: 2188.07(PFA)

Certified Mail No. 70020860000530543245

Mr. Stan Williams
Chief Executive Officer
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3614

Subject: Order R2-2002-0089, Santa Clara Valley Water District Lower Guadalupe River Flood Protection Project, Santa Clara County

Dear Mr. Williams:

The Regional Water Quality Control Board approved the enclosed Order on September 18, 2002. An electronic copy of the Order and appendices can be downloaded at http://www.swrcb.ca.gov/~rwqcb2. If you have any questions, please contact Paul Amato at (510) 622-2429 or pa@rb2.swrcb.ca.gov.

Sincerely,

Loretta K. Barsamian

Loretta K. Barsamian
Executive Officer

Enclosure: Order

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER R2-2002-0089

WASTE DISCHARGE REQUIREMENTS AND WATER QUALITY CERTIFICATION FOR:

SANTA CLARA VALLEY WATER DISTRICT, LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT, CITIES OF SAN JOSE AND SANTA CLARA, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter Board), finds that:

1. **Scope of Order:** This Order establishes requirements for the Lower Guadalupe River Flood Protection Project (hereinafter the Project) as described in Finding No. 6 below, to be constructed by the Santa Clara Valley Water District (hereinafter the Discharger).

2. **Application:** The Discharger applied to the Board on April 8, 2002, for Water Quality Certification under Section 401 of the Clean Water Act, and for waste discharge requirements (WDRs), or waiver thereof, under the Porter-Cologne Water Quality Control Act, for the Project. The Discharger has applied to conduct activities to provide 100-year flood protection along the lower Guadalupe River, a tributary to South San Francisco Bay.

3. **Purpose:** The Project proposes to modify previous flood control measures implemented in 1983 and 1995 on the lower Guadalupe River. These modifications would restore the flood conveyance capacity of the existing channel and provide additional capacity to convey flood flows of approximately 18,350 cubic feet per second (cfs) during a design flood event. Portions of the lower Guadalupe River will currently flood at discharges of 14,000 to 17,000 cfs.

4. **Project Need:** Since 1940, there have been 10 noteworthy floods of the Guadalupe River, the most recent ones in 1982, 1983, 1986, 1995, and 1998. The March 1995 flood was the largest, with instantaneous peak discharge (i.e., outflow rate) of 11,000 cfs at the Guadalupe gauging station, downstream of Los Gatos Creek.

   The principal causes of this flooding were: (1) development practices have allowed development within the natural flood plain of the river system, and (2) development has occurred in a manner that increased the amount of land covered with impervious surfaces, thereby reducing natural percolation into the ground, increasing the rate of stormwater runoff and increasing peak flood flows, exceeding the capacity of the channel. Development in the watershed is estimated to have increased peak flows by 30 to 50% over pre-development peak flows.

5. **Related Projects:** Two additional flood protection projects have been designed upstream of the Project **(Appendix A)**. They are the Upper Guadalupe River Flood Control Project, which is under development and is planned for completion in 2017, and the Guadalupe River Project (also known as the Downtown Project), permitted by Board Order No. 01-036, which is designed to convey 17,000 cfs through the downtown San Jose portion of the Guadalupe River upon completion in 2004. A Local Cooperative Agreement (LCA) between the U.S. Army Corps of Engineers, and the Discharger, requires the lower Guadalupe River to have enough flood capacity to convey flows from the Downtown Project upon completion. Without completion of the Lower and Downtown Projects, approximately 4,290 buildings would be flooded during a 100-year design flood event.

6. In addition, Board Order No. R2-2002-0028, for the Santa Clara Valley Water District Multi-Year Stream Maintenance Program (SMP), was adopted on February 27, 2002, to permit the Discharger to conduct stream maintenance activities throughout the Santa Clara Basin. Permitted activities include sediment removal, vegetation management, bank protection, and specific minor maintenance activities. Order No. R2-2002-0028 permits vegetation management and sediment removal from the lower Guadalupe River to provide additional flood protection capacity within the Project area. Impacts resulting from vegetation management and sediment removal within the Project area are considered temporary and will be mitigated according to the compensatory mitigation program described in Order No. R2-2002-0028.

Project Description, Setting and History

7. **Project Description:** The Project would involve modifications along 6.5 miles of channel between Interstate 880 upstream and the Union Pacific Railroad (UPRR) downstream **(Appendix B)**. Additional work will be conducted downstream of the UPRR in Alviso Slough in the Baylands area. The Project has been divided into seven separate reaches. These reaches are (from upstream [south] to downstream [north]):

Reach A: I-880 to U.S. Highway 101 (U.S. 101),
Reach B: U.S. 101 to Trimble Road,
Reach C: Trimble Road to Montague Expressway,
Reach D: Montague Expressway to the Hetch Hetchy Aqueduct,
Reach E: Hetch Hetchy Aqueduct to Tasman Drive,
Reach F: Tasman Drive to State Route (SR) 237,
Reach G: SR 237 to the UPRR Bridge in Alviso.

The major elements of the Project include:

a. Minor bank modification at the I-880 bridge approach in reach A;

b. Construction of up to four grade control weirs in the reach A low-flow channel downstream of I-880, and grade control weirs and invert stabilization at U.S. 101, Trimble Road, and Montague Expressway;

c. Construction of floodwalls in reach A upstream of U.S. 101, in reach F upstream of SR 237, and in reach G;

d. Levee improvements through construction of levee raises in reaches A–F;

e. Levee construction along Alviso Slough;

f. Replacement of the SR 237 eastbound bridge to match the westbound bridge profile;

g. Modification of stormdrain outfalls in reaches A, C, D, F, and G;

h. Improvement of maintenance access roads, construction of new depressed maintenance roads in reach G, and construction of maintenance road undercrossings at bridges;

i. Bridge scour protection and invert stabilization;

j. Accommodation of future recreation trail extensions on levees in the Project area;

k. Moderate to aggressive management of sediment and vegetation in reaches A–G;

l. Pumping floodwaters from Cargill Salt Ponds A5, A6, A7, A8D, and A8W; and

m. Construction of an overflow weir from Alviso Slough to the Cargill Salt Ponds.

Modifications, by reach, include the following:

Reach A will include floodwall construction; aggressive, moderate, and limited vegetation management, avoiding a 15-foot riparian buffer on either side of the low flow channel; planting riparian vegetation; up to four rock weir invert stabilization structures; minor bank stabilization; and new maintenance roads and ramps. A 2-foot floodwall will be constructed on top of both banks from Highway 101 to 98 feet upstream. Aggressive vegetation management in the first 394 feet downstream of I-880, excluding the overlapping U.S. Army Corps of Engineers shaded riverine aquatic (SRA) mitigation area, involves regular cutting of vegetation to a height less than 1 foot across the channel. Moderate vegetation management will occur from the Highway 101 Bridge crossing to the downstream end of the Project, and involves allowing trees to reach a height of 5 feet and herbaceous vegetation to reach a height of 1 foot. Limited vegetation management is permitted in the Corps' SRA areas on either side of the low flow channel and involves the removal of snags and debris only. Approximately 1.88 acres of riparian vegetation will be planted. Up to four rock weir stabilization structures will be installed at grade with the channel bed and banks, and are designed to provide fish passage at all flows. Minor bank stabilization will occur on the east bank between Highway 101 and 246 feet upstream of the Airport Island Bridge crossing and will include rock riprap and gabion slope protection. An 18-foot wide maintenance road on the top of bank will include an

eastbank underpass for Airport Island Bridge, a westbank underpass at Airport Parkway Bridge, east and westbank underpasses at Highway 101 and Skyport Drive Bridge and access ramps. All the Project maintenance roads and ramps will be surfaced with 0.5 foot of aggregate.

Reach B will include levee raising, levee setback, sediment and vegetation removal, planting riparian vegetation, maintenance access road improvements, and outfall modifications. Levees will be raised in some portions to 1 foot above existing elevations. Downstream of U.S. 101, the west bank levee will be set back an additional 80 feet from its current location. To maintain channel capacity, periodic sediment removal and moderate vegetation management will occur in the overbank areas. Periodic moderate vegetation management will occur in the overbank areas and inboard levee slopes, avoiding a 19.7-foot riparian buffer on either side of the low flow channel. Approximately 2.23 acres of riparian vegetation will be planted. Maintenance roads on top of the levees will be widened to meet the minimum width requirement of 18 feet. Maintenance access road improvements will include 0.5 feet aggregate surfacing. Nine outfalls will be protected in place, and one minor outfall will require modification.

Reach C will include minor levee raising, moderate vegetation management, sediment removal, planting riparian vegetation, and maintenance access road improvements. Levees will be raised approximately 1.6 feet on both banks. An approximately 100-foot wide overflow channel will be re-excavated on the east bench along side the low flow channel. Periodic sediment removal will occur in the re-excavated overflow channel to maintain capacity. Periodic moderate vegetation management will occur in the re-excavated overflow channel and inboard levee slopes, avoiding a 19.7-foot riparian buffer on either side of the low flow channel. Approximately 2.36 acres of riparian vegetation will be planted. Maintenance roads on top of the levees will be improved to meet the minimum width requirement of 18 feet, and a new depressed maintenance road will be constructed on both banks going under Trimble Road and Montague Expressway.

Reach D will include minor levee raising, vegetation and sediment removal, maintenance access road improvements, and outfall modifications. Levees will be raised 2.3 feet. Maintenance roads on top of the levees will be widened to meet the minimum width requirement of 18 feet. Two 34.8-feet wide overflow channels will be re-excavated to remove accumulated sediment in the overbank areas. Periodic sediment removal will occur in the re-excavated overflow channels to maintain capacity. Periodic minor vegetation management will occur in the areas outside the 100 to 150-foot riparian buffer areas. Only periodic limited vegetation management will occur in the riparian buffer area. Access ramps will be constructed along both banks at 328 feet downstream of Montague Expressway to the existing maintenance roads. Five major and five minor outfalls will require modifications.

Reach E will include minor levee raising, vegetation and sediment removal, maintenance access road improvements, and outfall modifications. Levees will be raised 1.6 feet. Two 34.8-feet wide overflow channels will be re-excavated to remove accumulated sediment in the overbank areas. Periodic sediment removal will occur in the re-

excavated overflow channels to maintain capacity. Periodic minor vegetation management will occur in the areas outside the 100 to 150-foot riparian buffer areas. Only periodic limited vegetation management will occur in the riparian buffer area. Maintenance roads on top of the levees will be widened to meet the minimum width requirement of 18 feet. New depressed maintenance roads will be constructed on both banks to provide access beneath Tasman Drive. Two major and two minor outfalls will require modifications.

Reach F will include replacing the eastbound span of SR 237, floodwall construction and levee raising, levee rehabilitation, vegetation management, maintenance access road improvements, and outfall modifications. The eastbound crossing at SR 237 will be replaced at a slightly higher elevation than the westbound crossing to increase flood capacity and freeboard. Because of lack of right of way needed to raise the existing levees, floodwalls will be constructed along the inboard levee hinge of the first 1,969 feet of levees. The remaining levees will be raised on average 2.3 feet. Depressed maintenance roads will be constructed to provide access beneath Tasman Drive. Sediment management has not been identified for this reach but aggressive vegetation management will be required at the beginning of each flood season outside of a 19.7-foot buffer along the low flow channel. Six major and two minor outfalls will require modifications.

Reach G, from SR 237 to the UPRR will include floodwall construction, vegetation and sediment removal, maintenance access road improvements including new construction of depressed maintenance roads, and outfall modifications. Because of the lack of right of way needed to raise the levees and to avoid wetland encroachment, floodwalls will be constructed on the inboard levee hinge. Sediment and vegetation will be removed to a depth of 3.28 feet for a width of 39.36 feet along the edge of the depressed maintenance roads. Aggressive vegetation management through herbicide application will be used to control the growth of dense tule vegetation in the remaining overbank areas. A 19.7-foot buffer along the low flow channel will be avoided. New 21-foot wide depressed maintenance roads will be constructed along the toe of the existing levees to provide access to sediment and vegetation management areas. Three major and two minor outfalls will require modification.

The Baylands portion of the Project involves vegetation management, levee construction, construction of an overflow weir opposite Alviso, levee repair, and pumping activities. Vegetation along approximately 738 linear feet of the east bank of Alviso Slough would be aggressively managed to lower floodwater elevations. An overflow weir would be constructed between Alviso Slough and the community of Alviso to prevent flooding. This overflow weir would be approximately 82 feet by 1,000 feet, and would be constructed on an existing levee that is currently overtopped during high flows. The weir would facilitate flows into Cargill Salt Ponds A5, A6, A7, A8D, and A8W. The southerly levee of Pond A6 contains three low spots that allow rare flood flows to enter Pond A6 from Ponds A5 and A7. These low spots, cumulatively, are approximately 1300 feet long by 40 feet wide and will be armored with articulated concrete mats and backfilled with native soil, to prevent levee failure due to the potential overtopping. A

pumping plan will be implemented after flooding to de-water critical environmental areas in the salt ponds.

8. The Project will result in the excavation of approximately 183,100 cubic yards (cyd) of sediment. Of that, 72,000 cyd of sediment removal are already accounted for and regulated under the SMP's Board Order as described in Finding 6 of this Order. Of the remaining 111,200 cyd, 52,300 cyd will be removed from the bed and the remaining 58,500 cyd will be excavated from the banks to create riparian planting benches.

9. The Project will result in the discharge of approximately 235,400 cyd of fill to the lower Guadalupe River. Of that, approximately 26,000 cyd will be placed below ordinary high water and approximately 209,000 cyd will be placed above ordinary high water. Fill placed below ordinary high water will be used primarily for the construction of depressed maintenance roads, access ramps, rock weir stabilization structures, and slope protection. Fill placed above ordinary high water will be used primarily for levee raising, floodwalls, access ramps, and slope protection.

10. **Project Setting and History:** The Guadalupe River begins at the confluence of Alamitos Creek and Guadalupe Creek, just downstream of Coleman Road in San Jose. From its beginning, the River flows north approximately 14 miles through urbanized portions of San Jose and Santa Clara, eventually discharging into San Francisco Bay through Alviso Slough. At State Route (SR) 237, the River has a total drainage area of approximately 160 square miles. The lower Guadalupe River reaches receive runoff from an urbanized region, which comprises a steep upper watershed, an urban residential and light commercial zone, and a significantly developed and growing downtown commercial zone. Storm drainage from these areas and from pumped stormwater flows within the Project area are also currently discharged into the lower Guadalupe River, adding to the volume of runoff.

    Because of the lower Guadalupe River's historical flooding potential, several flood-control projects have been implemented since the 1940s. In 1963, the historical River channel was modified in the "central zone" (an area encompassing the lower Guadalupe River). The modified channel, designed to convey a peak flood discharge of 12,000 cfs, consisted of a trapezoidal cross section with benches between the main channel and the constructed levees.

    In 1983, the Discharger again improved the lower Guadalupe River channel by raising and setting back levees, excavating channels in the overbank (between the low-flow channel and new levee toes), and recommending maintenance to the design cross section of the channel. The 1983 improvements were designed to convey a peak flood discharge of 17,000 cfs from U.S. 101 to the UPRR Bridge. Implementation of a sediment maintenance plan began as part of this project. Subsequent channel maintenance activities varied from year to year until approximately 1992, when sediment management on the lower Guadalupe River was suspended because of regulatory limitations and concerns about biological effects.

In spring 1995, the Discharger assembled an emergency project team to investigate options to restore the lower Guadalupe River's flood capacity in the interim period before completion of a comprehensive, multi-objective planning study and capital improvement project. An interim levee restoration project was constructed in summer 1995 to carry the Corps' design flood flow with 50% of the design freeboard. The project raised the lower Guadalupe River levees at selected locations between the UPRR Bridge and U.S. 101.

The current lower Guadalupe River is confined within flood-control levees. Both the low-flow and flood conveyance channels have been straightened and confined by the previous projects. As a result, the low-flow channel is incised throughout the reach, and sediment accumulates between the low-flow channel and the toe of the levees during annual high-flow events. Sediment deposition and vegetation growth in the channel have reduced the overall capacity of the lower Guadalupe River channel from its 1983 capacity of 17,000 cfs to approximately 14,000 cfs. In addition, ground subsidence within the reach has altered the river's longitudinal slope. The lower end of the reach also has daily tidal inflow and outflow that extends upstream of Tasman Drive and results in tailwater effects on the
River flows. Fine sediments are deposited and hardened in these tidally influenced sections of the River, causing a continuing gradual decline in the River's hydraulic conveyance capacity.

Current planning for the Project has focused on restoring channel capacity to approximately 17,000 cfs to meet the terms of the Discharger's Local Cooperative Agreement (LCA) with the Corps, which was signed in March 1992. Under the terms of the LCA, the Discharger would operate and manage the lower Guadalupe River to provide the Corp's design flood capacity. Inability to meet the LCA requirements could delay or jeopardize completion of the Downtown Project. The Project was initiated as a Discharger study after the lower Guadalupe River was found to have inadequate capacity to carry design flood flows from the 1995 storm events.

The design flow rate shows an increase from 17,000 cfs at the upstream limit of the Project to 18,350 cfs at the downstream limit. The upstream flow rate matches the rate being used for the design of the Downtown Project, immediately upstream of the Project. Downstream increases in flow are based on estimates of existing and planned pump inflows.

Hydraulic analyses were conducted to determine the flow rate at which the lower Guadalupe River would overtop the levees along the various reaches. It was determined that flows of approximately 14,000 cfs would overtop the existing levees between Tasman Drive and Montague Expressway. Downstream of Tasman Drive, the River would overtop the levees at flow rates of approximately 17,000 cfs. Upstream of Montague Expressway, the overflow capacity gradually increases to 15,000 cfs and to 20,000 cfs between each of the successive upstream reaches.

The Downtown Project is scheduled for completion in 2004. Once the Downtown Project is completed, peak flood flows would pass in greater volume to the lower Guadalupe River. Because the lower Guadalupe River currently cannot convey the expected design flood event, floodway modifications would be designed and constructed to ensure that the channel improvements are operated and managed to convey the design flood flow with a peak of 18,350 cfs at Alviso.

Environmental Documentation

11. **CEQA:** The California Environmental Quality Act (CEQA) requires all projects approved by State agencies to be in full compliance with CEQA and requires a lead agency to prepare an appropriate environmental document for such projects. The public comment period for the August 2001, Lower Guadalupe River Planning Study, Draft Environmental Impact Report (SCH# 2000042051) began on August 22, 2001, with an announcement of the availability of the Draft Environmental Impact Report (DEIR). The formal public comment period closed on October 12, 2001. On October 2, 2001, a public hearing on the DEIR was held before the Discharger's Board of Directors in the community of Alviso. On July 9, 2002, a public hearing on the Final Environmental Impact Report (FEIR) was held, and the Discharger's Board of Directors certified the FEIR. The Regional Board has considered the DEIR and the FEIR.

Beneficial Uses, Project Impacts and Mitigation

12. **Beneficial Uses:** The Board is charged with protecting beneficial uses from pollution and nuisance that may occur as a result of waste discharges in the San Francisco Bay Region. The potential and existing beneficial uses for lower Guadalupe River, South San Francisco Bay, and the Santa Clara Valley Groundwater Basin as designated in the Water Quality Control Plan for the San Francisco Bay Basin, 1995, and by the Clean Water Act, Section 401 Beneficial Use Assessment for the Lower Guadalupe River Flood Protection Project, dated April 2002, submitted by the Discharger include:

Lower Guadalupe River

a. Cold Freshwater Habitat
b. Freshwater Replenishment
c. Groundwater Recharge
d. Industrial Service Supply
b. Fish Migration
c. Preservation of Rare and Endangered Species
d. Water Contact Recreation
e. Noncontact Water Recreation
f. Fish Spawning
g. Warm Freshwater Habitat
h. Wildlife Habitat

South San Francisco Bay

a. Ocean, Commercial, and Sport Fishing

b. Estuarine Habitat
c. Preservation of Rare and Endangered Species
d. Water Contact Recreation
e. Shellfish Harvesting
f. Fish Spawning
g. Wildlife Habitat

Santa Clara Valley Groundwater Basin
a. Municipal and Domestic Water Supply
b. Industrial Process Water Supply
c. Industrial Service Water Supply
d. Agricultural Water Supply

13. **Permanent Beneficial Use Impacts:** Project construction will result in permanent impacts to the following beneficial uses of the lower Guadalupe River, South San Francisco Bay, and the Santa Clara Valley Groundwater Basin;

Lower Guadalupe River
Wildlife Habitat will be permanently impacted due to the construction of slope protection structures, outfall structures, increased footprint of existing levees, depressed maintenance roads, and the overflow weir in Alviso Slough.

South San Francisco Bay
No permanent impacts are expected to occur.

Santa Clara Valley Groundwater Basin
No permanent impacts are expected to occur.

14. **Temporary Beneficial Use Impacts:** Project construction will result in temporary impacts to the following beneficial uses of the lower Guadalupe River, South San Francisco Bay, and the Santa Clara Valley Groundwater Basin:

Lower Guadalupe River
Temporary impacts to these beneficial uses will result from construction-related activities and periodic routine maintenance :

a. Cold Freshwater Habitat
b. Fish Migration
c. Preservation of Rare and Endangered Species
d. Water Contact Recreation
e. Noncontact Water Recreation
f. Fish Spawning
g. Warm Freshwater Habitat
h. Wildlife Habitat

South San Francisco Bay

No temporary impacts are expected to occur.

Santa Clara Valley Groundwater Basin
No temporary impacts are expected to occur.

15. **Permanent Jurisdictional Impacts:** As shown in Table 1, Project activities will result in the permanent loss of 0.48 acre of nontidal freshwater wetlands, 2.48 acres of tidal freshwater wetlands, 0.51 acre of other waters of the State and U.S., and 2.16 acres of riparian habitat. Permanent impacts will result from road and levee construction throughout the Project area, and from weir construction and levee maintenance activities in the Baylands along Alviso Slough.

16. **Temporary Jurisdictional Impacts:** As shown in Table 1, Project activities will result in the temporary loss of 27.33 acres of wetlands and other waters of the State and U.S. Temporary impacts to wetlands and other waters will result from sediment removal and vegetation management activities throughout the Project area, and from weir construction and levee maintenance activities in the Baylands along Alviso Slough.

Table 1. Lower Guadalupe River Flood Protection Project Impacts

Waterbody	Permanent Impacts (acres)	Temporary Impacts (acres)
Nontidal Freshwater Wetlands	0.48	1.27
Tidal Freshwater Wetlands	2.48	23.94
Other Waters	0.51	2.12
Total	**3.47**	**27.33**

Habitat Type	Permanent Impacts (acres)	Temporary Impacts (acres)
Riparian	2.16	0

17. **Related Project Jurisdictional Impacts:** Project sediment removal activities approved under the SMP will result in temporary impacts to 6.3 acres nontidal freshwater wetlands and 13.3 acres tidal freshwater wetlands within the limits of the Project. These impacts and associated mitigation will be addressed through implementation of the SMP , as described in Finding 6.

18. **Impact Avoidance and Minimization:** To avoid and minimize impacts to beneficial uses, wetlands, and other waters, the Discharger will implement the following plans and programs, and all measures included in the Lower Guadalupe River Flood Protection Project Mitigation and Monitoring Plan (MMP) **(Appendix C)**:
    a. Vegetation Protection Plan;
    b. Stormwater Pollution Prevention Plan (SWPPP);
    c. Erosion and Sediment Control Plan;
    d. Spill Prevention and Response Plan;
    e. Soil Management Plan;
    f. Hazardous and Toxic Materials Contingency Plan;
    g. Construction-Area Fish Management Program;
    h. Construction period limits;
    i. Measures to comply with the Migratory Bird Treaty Act;
    j. Bay Area Air Quality Management District feasible control measures for emissions;
    k. Traffic Management Plan;
    l. Cultural Resources Management Plan;
    m. Coordination with service providers before construction; and
    n. Noise reducing construction practices.

    In addition, the Discharger will implement the following plans developed and approved as part of the SMP, and will implement them as part of the Project:
    o. Best Management Practices Manual for the San Francisco Bay Area Region Multi-Year Stream Maintenance Program dated December 2001,
    p. Final Sediment Characterization Plan for the Multi-Year Stream Maintenance Program dated December 2001, and
    q. Final Self-Monitoring Program Water Quality Sampling Plan dated December 2001.

19. **Permanent Jurisdictional Impact Mitigation:** To compensate for unavoidable, permanent impacts to beneficial uses, wetlands and other waters, the Discharger will construct a minimum of 6.94 acres of wetlands at its tidal wetland mitigation site (formerly Cargill Salt Pond A4) located along South San Francisco Bay **(Appendix D)**, and revegetate a minimum of 6.48 acres of riparian area within the Project, with appropriate native riparian species.

20. **Temporary Impact Mitigation:** To compensate for unavoidable, temporary impacts to beneficial uses, its wetlands and other waters, the Discharger will construct a minimum of 28.60 acres of wetlands at their tidal wetland mitigation site (formerly Cargill Salt Pond A4) located along South San Francisco Bay **(Appendix D)**.

21. **Mitigation Monitoring Plan:** The MMP provides a full description of the Project compensatory mitigation components, measurable objectives for success, and monitoring protocols, and reporting requirements.

Adaptive Management

22. **Setback Levee Agreement:** The Discharger has not determined whether all opportunities to set back existing levees along the lower Guadalupe River have been identified. Goals of setting back existing levees include improved flood capacity and geomorphic function of the lower Guadalupe River at a given location within the Project, and a decreased need for channel modifications that can result in impacts to water quality and beneficial uses. Participants of the Guadalupe Watershed Integration Workgroup (GWIWG), representing federal, state, and local government agencies, the Discharger, and others **(Appendix E)** have agreed that opportunities may exist to set back existing levees and, that the Discharger should continue to investigate levee setback feasibility even after the Project is approved. In response to this agreement, the Discharger has modified the Project design to include setback levees in Reach B, to the maximum width available and has identified other open parcels adjacent to the lower Guadalupe River that could potentially accommodate the setting back of existing levees.

In the interest of meeting flood damage reduction requirements by 2004 and complying with the LCA, this Order does not include specific plans for setting back existing levees. However, the participants of the GWIWG recognize that current efforts towards setting back levees may not be exhaustive. If the Discharger's further investigations result in additional opportunities to set back levees, the Discharger will evaluate these opportunities in the interest of improving flood capacity, water quality, and beneficial uses of the Guadalupe River. An Adaptive Management Team (AMT) was previously formed as a technical review panel for the Downtown Project. The AMT will continue to operate in its role reviewing the Downtown Project and will also act as a review panel for the Lower Guadalupe River Project. Proposals to set back levees will be reviewed for technical feasibility by the AMT and submitted to the Executive Officer for approval.

23. **Guadalupe River Baylands Restoration Agreement:** Participants of the GWIWG have suggested that the Discharger investigate the feasibility of restoring the delta of the Guadalupe River in the Baylands where Cargill salt evaporator ponds currently operate. Goals of restoring the Guadalupe River delta include increased flood capacity of the lower Guadalupe River, and improved habitat in the Baylands in the area surrounding the mouth of the Guadalupe River. It has been recognized by the GWIWG that an effort to restore the delta of the Guadalupe River is beyond the scope of the current Project due to the level of planning required, uncertainties regarding land availability, current available resources, and conflicts between the amount of time required for completion and the LCA with the Corps.

The Discharger has agreed to active involvement in future discussions and planning pertaining to acquisition and restoration efforts in the Baylands, particularly in the vicinity of the mouth of the Guadalupe River. In recognition of this agreement, if parcels

in the Baylands become available for restoration, and are determined to be in locations that would conform to restoration efforts of the Guadalupe River delta, then the Discharger will determine how it can best serve this effort while increasing flood capacity and meeting regional habitat restoration goals in the Baylands.

Regulatory Framework

24. The Board, on June 21, 1995, adopted, in accordance with Section 13244 et. seq. of the California Water Code, a revised Water Quality Control Plan, San Francisco Bay Basin (Basin Plan). The State Water Resources Control Board and the Office of Administrative Law approved this updated and consolidated revised Basin Plan on July 20, 1995, and November 13, 1995, respectively. A summary of the revisions to the regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. This Order is in compliance with the Basin Plan.

25. In accordance with Section 13050(d) of the California Water Code, " 'Waste' includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin..." The Board has determined that the discharge of sediment related to construction activities and the discharge of sediment associated with incidental fall back related to dredging activities into "Waters of the State" as defined in Section 13050(e) of the California Water Code, are defined as waste and require the Discharger to file a report of waste discharge with the Board in accordance with Section 13260(a)(1) of the California Water Code. The Discharger filed a report of waste discharge on April 8, 2002.

26. The Basin Plan Wetland Fill Policy establishes that there is to be no net loss of wetland acreage and no net loss of wetland value when a project and any proposed mitigation are evaluated together, and that mitigation for wetland fill projects is to be located in the same area of the Region, wherever possible, as the project. The Project complies with the Policy. The Policy further establishes that wetland disturbances should be avoided whenever possible, and if not possible, should be minimized, and only after avoidance and minimization of impacts should mitigation for lost wetlands be considered. The Discharger has submitted documentation to show that appropriate effort was made to avoid and then to minimize the Project's wetland disturbance, as required by the Basin Plan. The Board concurs with this finding.

27. Pursuant to California Water Code Section 13263 and Title 23, California Code of Regulations Section 3857 and 3859, the Board is issuing WDRs and Water Quality Certification for the Project.

28. The Board has notified the Discharger and interested parties of its intent to issue WDRs and Water Quality Certification for the Project.

29. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

30. Certification is conditioned upon total payment of any fee required under 23 CCR and owed by the Discharger.

31. A discharge of water (effluent) could result from the handling and placement of excavated material at an off-site temporary stockpile site (if used). Any effluent discharged during material placement and temporary storage is referred to as "decant water." This Order regulates effluent discharged as a result of excavated material placement and temporary storage as described in Provision D.13. of this Order.

IT IS HEREBY ORDERED that, with the implementation of the following conditions and requirements, the Board certifies that the Project described herein will comply with the applicable provisions of sections 301, 302, 303, 306 and 307 of the Clean Water Act. It is further ordered that, pursuant to California Water Code sections 13263 and 13267, the Discharger shall comply with the following:

A. Discharge Prohibitions

1. Project activities that result in the direct discharge of waste, as described in Section 13050(d), of the California Water Code, from construction sites to surface waters or surface water drainage courses are prohibited.

2. Project activities subject to these requirements shall not cause a nuisance as defined in Section 13050(m) of the California Water Code.

3. Excavated material shall remain within designated disposal areas at all times. The designated disposal areas are: (a) an off-site temporary or permanent location in accordance with federal and state regulations, (b) any on-site temporary location provided material will be isolated and contained to prevent impacts to jurisdictional waters and beneficial uses, or (c) a permitted landfill.

4. The discharge of decant water from any temporary excavated material stockpile or storage areas to surface waters or surface water drainage courses outside of the active excavation site is prohibited except where BMPs are adopted to comply with effluent and receiving water limitations.

5. Groundwater beneficial uses shall not be degraded as a result of the Project.

B. Effluent Limitations

Wastewater (decant water and/or runoff water), and diverted water that drains to waters of the State shall not exceed the following limits of quality at any time:

pH: 0.5 pH units above or below ambient levels
Settleable matter: 1.0 ml/l/hr
Dissolved sulfide: 0.1 mg/l

C. Receiving Water Limitations

1. The Project's activities shall not cause:

   a. The temperature of any waters providing cold or warm freshwater habitat to be increased by more than 5° F above natural temperatures unless a qualified biologist can demonstrate that such alteration in temperature does not adversely affect beneficial uses.

   b. Floating, suspended or deposited macroscopic particulate matter or foam in waters of the State at any place more than 100 feet from the point of discharge of diverted flow or decant water.

   c. Alteration of apparent color beyond present natural background levels in waters of the State at any place more than 100 feet from the point of discharge of diverted flow or decant water.

   d. Visible floating, suspended, or deposited oil or other products of petroleum origin in waters of the State at any place more than 100 feet from the point of discharge of diverted flow or decant water.

   e. The diverted flow or decant water shall not cause waters of the State to exceed the following water quality limits at 100 feet downstream from the point of discharge of diverted flow or decant water:

      i. Dissolved Oxygen: 7.0 mg/l minimum. When natural factors cause lesser ambient concentrations, then the discharge shall not cause further reduction in the concentration of dissolved oxygen.

      ii. pH: A variation of natural ambient pH by more than 0.5 pH units.

      iii. Toxic or other deleterious substances: None shall be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

2. Turbidity of the waters of the State, as measured in NTUs, 100 feet downstream from the point of discharge of diverted flow and decant water, shall not increase above background levels by more than the following at any time:

Receiving Waters Background	Incremental Increase
< 50 units	5 NTUs
≥ 50 units	10% of background, maximum

D. Provisions

General Provisions

1. The Discharger will comply with this Order, in its entirety, immediately upon adoption of this Order except where Provisions of this Order specify alternative compliance dates.

2. All plans and reports pursuant to these Provisions shall be prepared under the supervision of a suitable professional registered in the State of California.

3. Project impacts shall not exceed amounts listed in Table 1 of this Order.

4. Construction in the Guadalupe River, below ordinary high water (2.33 year flood recurrence interval) will be limited to the summer dry season between May 1 and October 15 of each year, to prevent impacts to steelhead trout and Chinook salmon, unless notification and approval by the Executive Officer are received in advance.

5. The Discharger is responsible for correcting any and all problems which arise in the event of Project failure, including a failure to meet the conditions of this Order, that result in an unauthorized release of waste or wastewater.

6. Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

7. This Order does not authorize commission of any act causing injury to the property of another or of the public; does not convey any property rights; does not remove liability under federal, state or local laws, regulations or rules of other programs and agencies nor does this Order authorize the discharge of wastes without appropriate permits from other agencies or organizations.

8. The Discharger shall comply with all necessary approvals and/or permits for the Project from applicable government agencies, and shall submit copies of such approvals and/or permits to the Executive Officer prior to Project implementation.

9. The Discharger shall ensure that all individuals working on Project work sites, including any and all contractors and sub-contractors, are familiar with the contents and requirements of this Order, and all relevant plans and BMPs, and shall keep copies of these documents at Project work sites so as to be readily available at all times to operating personnel and workers.

10. Every certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code and 23 CCR Section 3867.

11. The Discharger shall permit the Board or its authorized representative, upon presentation of credentials:

    a. Entry on to the premises on which Project activities are planned or underway, wastes are located, or in which records are kept.

    b. Access to copy any records required to be kept under the terms and conditions of this Order.

    c. Access to inspect any treatment equipment, monitoring equipment or monitoring method required by this Order.

    d. Access to sample any discharge or surface water covered by this Order.

Sediment Removal and Vegetation Management Provisions

12. The Discharger may temporarily stockpile excavated material prior to disposal or reuse provided that appropriate BMPs are implemented to protect water quality and beneficial uses. The excavated material may be stockpiled on-site for Project reuse or for loading into trucks for off-site disposal. The Discharger shall contain temporary on-site stockpiled material so that runoff, sediment, or decant water from the excavated material will not contact waters of the State outside the active excavation site without first being treated to meet receiving water limitations described in this Order.

13. The Discharger shall ultimately dispose of dewatered excavated material at a permitted landfill, upland disposal site, or at a reuse site in accordance with applicable state and federal regulations including applicable provisions of this Order and the Downtown Guadalupe Flood Control Project Mitigation and Monitoring Plan mercury level requirements, pages 2-23 and 2-24.

14. A delineation of existing jurisdictional waters of the State and United States at any temporary excavated material disposal site verified according to U.S. Army Corps of Engineers delineation standards shall be conducted by a qualified biologist prior to the construction of an impoundment at the site and submitted to the Executive Officer prior to the disposal of excavated material at the site(s).

15. The Discharger shall allow natural recruitment of vegetation in all vegetation management areas and will implement vegetation maintenance guidelines as outlined in the Project Engineer's Report dated June 2002.

Water Quality Provisions

16. The Discharger shall implement BMPs to prevent pollutants from draining into waters of the State, including the discharge of pollutants from temporary stockpiles of excavated material, during transport of excavated material, from application of herbicides and pesticides, and from vegetation and construction related materials.

17. The Discharger shall remove and properly dispose of any wastes that are discharged at any Project work sites in violation of this Order.

18. The discharge of any hazardous, designated or non-hazardous waste as defined in Title 27, Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations shall be conducted in accordance with applicable state and federal laws and regulations.

19. The Discharger shall file with the Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the designed disposal areas.

20. To prevent surface erosion and sedimentation, disturbed soil related to Project activities will be stabilized, winterized, and revegetated with appropriate native vegetation or appropriate non-native sterile seed mix no later than October 15th, without notification and approval of the Executive Officer of a later date.

21. The Discharger shall divert any flow at the site (hereinafter diverted flow) around the active Project work site in a non-erosive manner using a pipe, or other BMP measure such that the flow does not flow across active work sites.

22. If dead or dying fish or fish exhibiting stress are observed within 1,000 feet of Project work activity or discharge, the Discharger shall immediately assign a qualified biologist to investigate the cause of the problem and define an acceptable corrective action plan. If the cause is related to Project activities, the Discharger shall halt work activities until an acceptable corrective action plan can be implemented. The Discharger shall immediately report all incidences involving dead or dying fish or fish exhibiting stress, as well as prescribed action plans to the Board and the California Department of Fish and Game.

23. Pursuant to California Water Code Section 13267, the Discharger shall submit a pumping plan and a water quality assessment to the Executive Officer six months after adoption of this Order, describing methods and locations of post-flood salt pond pumping along Alviso Slough and any anticipated water quality impacts that may result from salt pond discharges. If it is determined that water quality impacts may occur, the Discharger shall develop a contingency plan to avoid impacts to water quality and beneficial uses.

Mitigation, Monitoring and Reporting Provisions

24. The Discharger shall comply with the MMP as described in Findings 18 and 21 of this Order and with any changes to the MMP developed by the AMT and approved by the Executive Officer.

25. If compensatory mitigation has not developed in accordance with the performance criteria established in the MMP by year 10 after project completion, the Discharger shall prepare a revised mitigation plan acceptable to the Executive Officer, addressing corrective action, outlining additional monitoring, or proposing new mitigation that will comply with the MMP's performance criteria. The revised mitigation plan will be submitted for Executive Officer approval no later than 90 days following the final 10-year monitoring report.

26. The Discharger shall sequence construction such that riparian mitigation planting will begin in fall /winter 2003 and be completed by fall/winter 2004. The Discharger shall submit a letter documenting compliance with this Provision, following riparian planting activities for each year.

27. No later than 60 days prior to the start of construction for each phase of the Project, the Discharger will submit 90% design plans to the Executive Officer, with the exception in Provision D.28.

28. The Discharger shall submit to the Executive Officer for approval, 60% design plans for the bed stabilization structures in Reach A, no later than 60 days prior to construction.

29. The Discharger shall develop and implement a Guadalupe River Watershed Sediment Source Identification and Reduction Program (Program) to identify and control significant sediment sources in the Guadalupe River Watershed. The primary objective of the Program will be to reduce the need for sediment removal activities described in Finding 8 of this Order, and associated impacts to water quality and beneficial uses in the reaches of the Project. The Discharger, in cooperation with Board staff , shall develop this Program to identify locations within the Guadalupe River Watershed where sediment inputs are considered significant contributors to downstream sediment deposition. The Program will identify measures, including but not limited to regulatory authority of the Board, to control identified sediment sources. A Program plan shall be submitted to the Executive Officer for approval no later than six months following the date of this Order. Program implementation shall begin no later than one year following the date of this Order.

Adaptive Management

30. Pursuant to California Water Code Section 13267, the Discharger shall submit a technical report to the Executive Officer six months following adoption of this Order, describing efforts to identify and pursue opportunities to set back levees along the lower Guadalupe River within the footprint of the Project. The Executive Officer will review

the report and respond in writing whether additional actions and reports are required to meet the goals of the Setback Levee Agreement described in Finding 22 of this Order.

31. Pursuant to California Water Code Section 13267, the Discharger shall submit a technical report to the Executive Officer one year following adoption of this Order, describing efforts to identify and pursue opportunities to restore the delta of the Guadalupe River in the Baylands. The Executive Officer will review the report and respond in writing whether additional actions and reports are required to meet the goals of the Guadalupe River Baylands Restoration Agreement described in Finding 23 of this Order.

I, Loretta Barsamian, Executive Officer, do hereby certify that the foregoing is a full, complete and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 18, 2002.

Loretta K. Barsamian

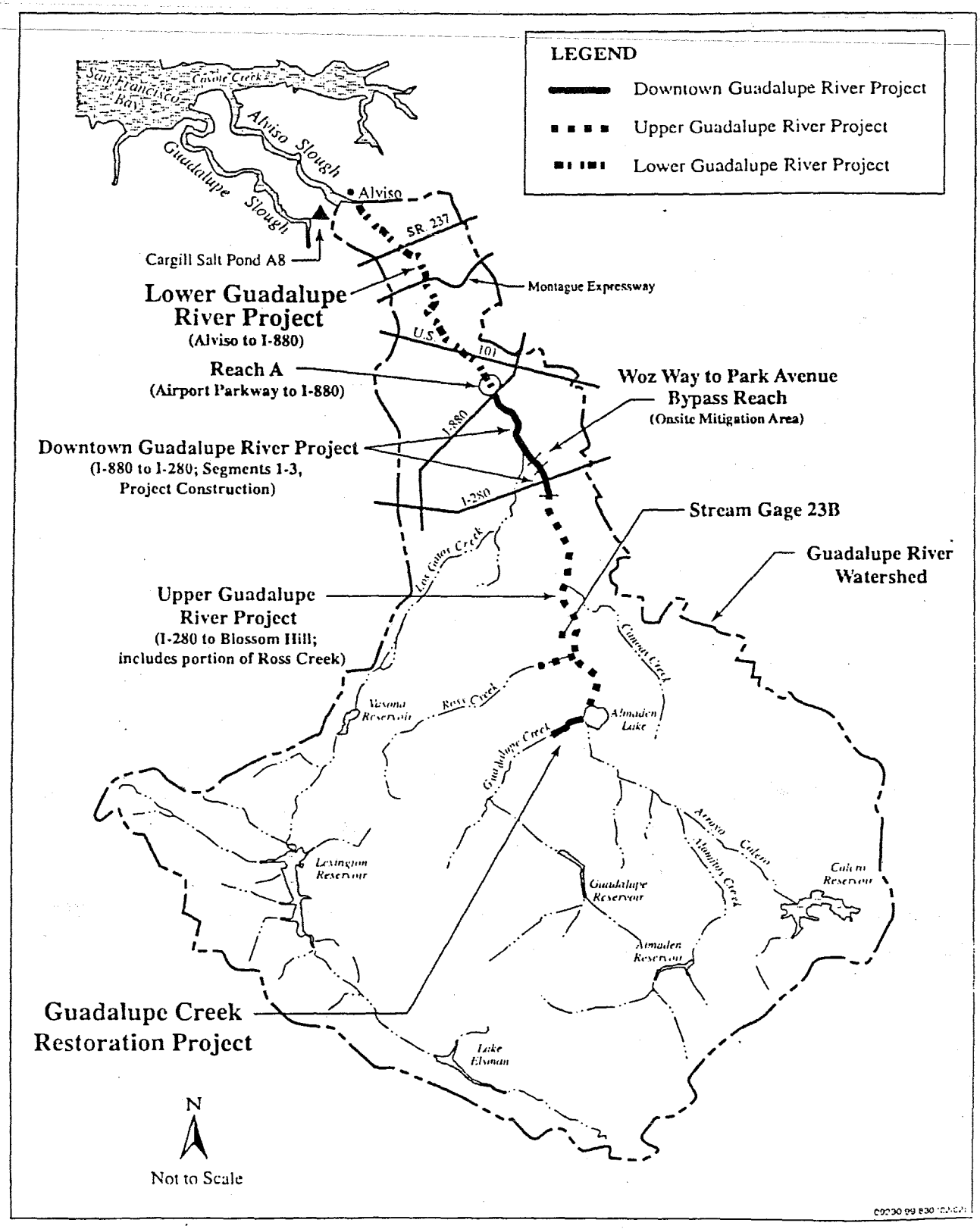
Loretta Barsamian
Executive Officer

Appendices:

A. Map of Related Projects
B. Map of Project Area
C. Lower Guadalupe River Flood Protection Project Mitigation and Monitoring Plan
D. Map of Wetland Mitigation Site
E. GWIWG Participants

APPENDIX A

MAP OF GUADALUPE RIVER FLOOD PROTECTION PROJECTS



Guadalupe River Watershed Including Project Construction Areas

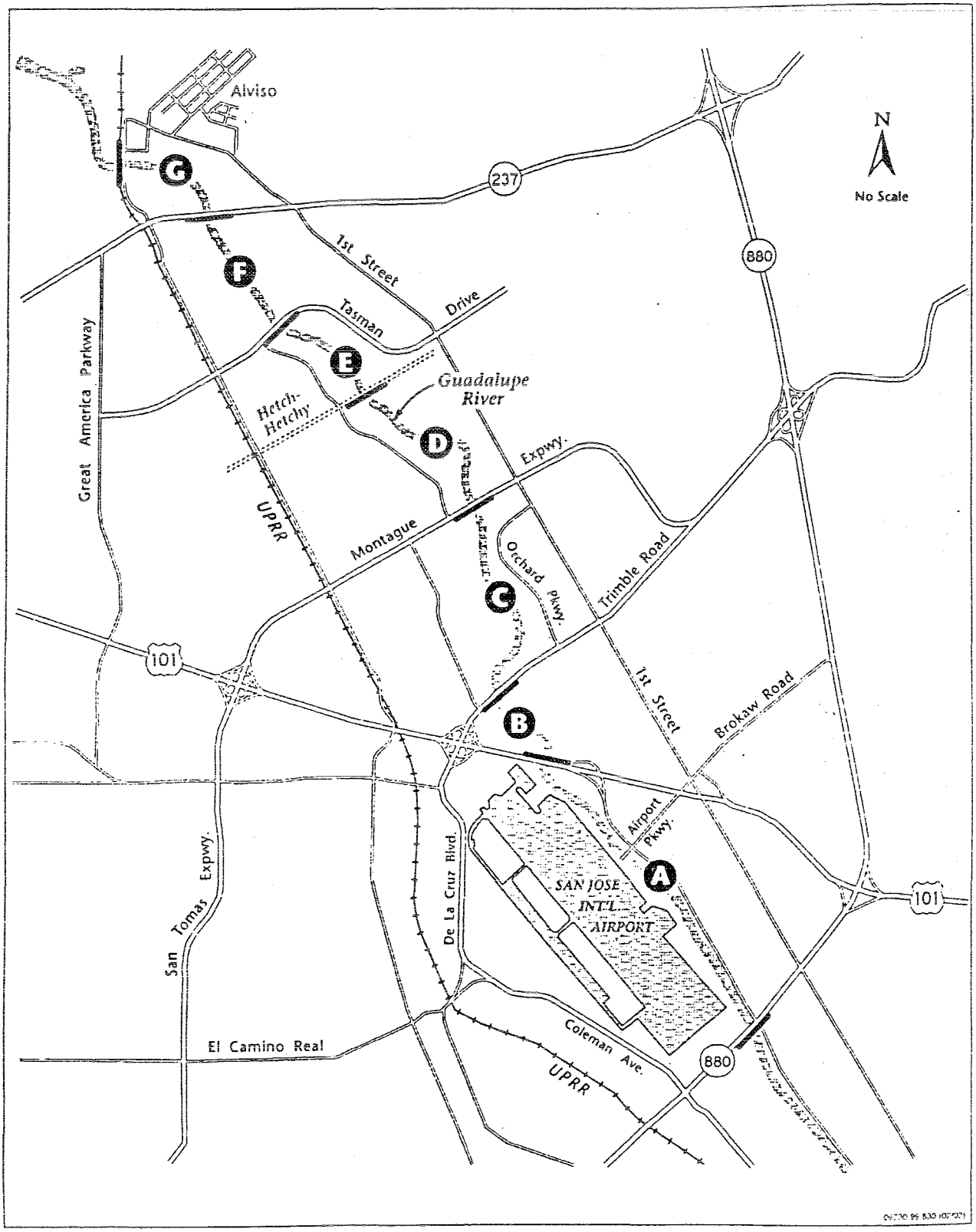
APPENDIX B

MAP OF PROJECT AREA

APPENDIX C

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT MITIGATION AND MONITORING PLAN

Due to the size of this appendix, paper copies will only be provided upon request. To request electronic copy, contact Paul Amato at pa@rb2.swrcb.ca.gov or go on line to http://www.swrcb.ca.gov/~rwqcb2



Location Map Showing Lower Guadalupe River Reaches

Draft
Lower Guadalupe River
Flood Protection Project
Mitigation and Monitoring Plan

Prepared by:

Santa Clara Valley Water District
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August 7, 2002

Santa Clara Valley Water District. 2002. Draft. *Lower Guadalupe River flood protection project, mitigation and monitoring plan.* August. (J&S 09-230.) Sacramento, CA.

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Chapter 1
Introduction

Mitigation Measures may refer to a wide range of conditions and controls on a project to reduce its impact on the environment. When a lead agency approves a project and adopts mitigation measures for significant impacts disclosed in an environmental impact report, it is required by California state law (Public Resources Code Section 21081.6) to establish a mitigation monitoring or reporting program to ensure that the mitigation measures are implemented.

This mitigation and monitoring plan (MMP) has been prepared to avoid, minimize, or compensate for impacts on resources from the Lower Guadalupe River Flood Protection Project (Project), as described in the LGRP Final environmental impact report (Final EIR) prepared by the Santa Clara Valley Water District (District) (Santa Clara Valley Water District 2002).

The MMP contains general introductory information on the MMP (Chapter 1); the LGRP proposed project description (Chapter 2); a mitigation and adaptive management program (Chapter 3); a list of citations (Chapter 4) and a list of report preparers (Chapter 5). Detailed plans and specifications for mitigation plantings are not part of the MMP but are included in the District's project designs.

The MMP is being prepared in response to CEQA and regulatory agency requirements associated with mitigation of project-related adverse effects on the environment. The MMP will be used to ensure that mitigation would:

- be adequate to ensure that the LGRP causes no significant adverse effects on environmental resources;
- fulfill the requirements stipulated in project permits and authorizing documents; and
- be in compliance with laws that govern adverse effects on environmental quality and with the legal instruments implementing those laws.

The MMP identifies and describes LGRP environmental commitments that would ensure the protection of environmental resources present in the project area. Unavoidable damages to resources must be rectified by repairing, rehabilitating, or restoring the affected resources. Damages to resources that cannot be repaired, rehabilitated, or restored must be compensated for by replacing them or providing substitute resources or environments. Substitute

resources, on the balance, need to be at least equal in value and significance to the resources lost.

Table 3-1 in Chapter 3 summarizes the LGRP impacts, mitigation objectives, environmental commitments, mitigation measures, location of measures, general monitoring and reporting requirements, timeframe for implementing the measures, and the entity responsible for implementing the mitigation measures.

An implementation plan (IP) will also be prepared for riparian and wetland habitat, fish passage and stranding, mercury-related mitigation measures, and measures to avoid impacts on special-status species in the Baylands study area after adoption and certification of the final EIR and issuance of permits by the regulatory agencies. The IP will provide detailed construction plans and specifications for implementing the adopted compensatory mitigation measures and mitigation measures requiring long-term monitoring activities. The IP will include specific techniques for implementing mitigation measures. The IP will, at a minimum, include the following items for habitat restoration mitigation measures:

- the rationale used to determine the target plant communities and mitigation ratios;
- planting techniques for terrestrial and aquatic vegetation corresponding to the planting surfaces;
- revegetation plant propagule types and planting densities that may be used in the target plant communities;
- proposed irrigation methods, water sources, and application rates;
- bank and planting area stabilization techniques that will be used;
- grass seeding techniques;
- fish stranding monitoring and report techniques; and
- monitoring and reporting requirements for avoiding impacts to special-status wildlife species

Compensatory mitigation implementation will be performed by a licensed revegetation contractor(s) experienced in site grading, stream and fisheries habitat restoration, and riparian habitat restoration. Before work begins on each mitigation phase, the contractor will stake the limits of work for approval by the District. The contractor will provide a 3-year maintenance and monitoring period after final acceptance of the implementation phase of the mitigation by the District. The District will provide long-term operations and maintenance for the Project.

Chapter 2
Project Description

The District proposes to construct the LGRP along the lower 10.5 km (6.5 miles) of the Guadalupe River, between I-880) and the UPRR bridge in the cities of San Jose and Santa Clara (figure 2-1). Through the LGRP, the District proposes to modify previous flood-control improvements initiated in 1982 and 1995 on the lower Guadalupe River. These modifications would restore the flood-conveyance capacity of the existing channel and provide additional capacity to convey flood flows of approximately 481 cms (17,000 cfs) during a design flood event. Based on hydrologic analyses, the proposed project will be able to accommodate an additional 1,350 cfs from local drainage in the cities of San Jose and Santa Clara. The proposed modifications would balance the need for flood-control structures and channel maintenance with the goal of protecting and enhancing environmental conditions and public access.

The LGRP is located downstream of 2 flood protection projects: the Upper Project and the Downtown Project (figure 2-1). Flood protection projects have already been initiated for these 2 reaches. Proposed flood protection work for the Upper Project has been authorized under Section 101(a)(9) of the Water Resources Development Act (WRDA) of 1999 (Public Law [PL] 106-53). The Downtown Project has been authorized under Section 401(b) of the WRDA of 1986 (PL 99-662) and is a federally authorized project (U.S. Army Corps of Engineers 2002). The LGRP is required to convey design flood flows from both the Upper Project and Downtown Project.

For the purposes of evaluation and discussion, the LGRP area is divided into 7 reaches (figure 2-2). These are (from upstream [south] to downstream [north]):

- reach A: I-880 to U.S. Highway 101 (U.S. 101),
- reach B: U.S. 101 to Trimble Road,
- reach C: Trimble Road to Montague Expressway,
- reach D: Montague Expressway to the Hetch Hetchy Aqueduct,
- reach E: Hetch Hetchy Aqueduct to Tasman Drive,
- reach F: Tasman Drive to State Route (SR) 237, and
- reach G: SR 237 to the UPRR bridge in Alviso.

The Proposed Project includes:

- minor bank modification at the I-880 bridge approach in reach A;
- construction of up to 4 grade-control weirs in the reach-A low-flow channel downstream of I-880 and grade-control weirs and invert stabilization at U.S. 101, Trimble Road, and Montague Expressway;
- construction of floodwalls in reach A (west bank) upstream of U.S. 101, in reach F upstream of SR 237, and in reach G;
- construction of levee raises in reaches A–F;
- replacement of the SR 237 eastbound bridge to match the westbound bridge profile;
- modification of up to 19 storm drain outfalls in reaches A, C, D, F, and G;
- improvement of maintenance access roads, construction of new depressed maintenance roads in reach G, and construction of maintenance road undercrossings at bridges;
- moderate to aggressive management of sediment and vegetation in reaches A–G;
- accommodation of future recreation trail extensions on levees in the project area; and
- levee maintenance.

Grade Control Weirs

Construction of up to 4 grade control weirs in the reach A low-flow channel would be required to stabilize the channel bottom, improve stream habitat, and reduce the potential for bank erosion. The weirs would provide additional instream cover and deepen pools for fish while providing adequate fish migration. (Please refer to figure 2-3 for typical detail of a grade control weir.) In addition, they would act as grade-control structures that would minimize upstream lateral migration of the low-flow channel, bank erosion, and aggradation.

The grade control weirs would be constructed of Class III riprap, 0.2–0.6 meter (m) (10–24 inches [in]) in diameter and would be keyed into the bank to eliminate erosion. The weirs would be constructed in an arch with the point of the arch facing upstream and the span at the minimum of the bankfull channel width. This design would direct stream energy away from the banks and create a downstream plunge pool for energy dissipation. The riprap weirs would be self-healing, preventing undermining of the weir structures. The width of the weirs would depend on the width of the river where the weirs are constructed.

Invert Stabilization

Invert stabilization would be required to prevent bridge pier scour under Skyport Drive, Airport Parkway, Airport Island Road, U.S. 101, Montague Expressway, and Trimble Road. Several grade control weirs, similar to those described previously, would also be needed to protect the U.S. 101, Montague Expressway, and Trimble Road bridges. The channel bed and banks would be over-excavated under the bridges and for a distance of 3 m upstream and downstream of the bridge. These excavations will be filled in by an approximately 1m-thick layer of Class III riprap that will be resistant to estimated shear loads. In addition, the uppermost layer of the riprap will be backfilled with native soil materials to allow the establishment of herbaceous vegetation.

Construction of Maintenance Road Undercrossings

New maintenance roads would be constructed under all bridges and would require some hardening in the vicinity of ramps from the channel to levee tops. In reach G, new depressed maintenance roads would be constructed on the east and west banks to provide access for maintenance vehicles and heavy equipment. The new maintenance road system would be 6.4 m (21 feet [ft]) wide and extend from SR 237 to the Gold Street bridge.

Bridge Replacement

The eastbound SR 237 bridge in reaches F and G poses a substantial constriction of the capacity of the lower Guadalupe River channel. To improve channel capacity at this location, the District is proposing to demolish the existing structure and to build a new bridge to match the height of the existing westbound bridge and road profile. The new bridge would be constructed within and immediately adjacent to the existing bridge footprint, and the new bridge piers would be placed in the same location as existing piers. Bridge construction would be conducted in late spring or early summer during seasonal low flows in the lower Guadalupe River. Designs for the replacement bridge are not yet completed.

Construction of Floodwalls

The LGRP project would require the construction of concrete floodwalls in reach A upstream of U.S. 101 (west bank), in reach F upstream of SR 237, and in all of reach G on both levees between SR 237 and the UPRR crossing. Floodwall heights at these locations would vary but would not exceed 1.22 m (4 ft) and would be constructed at the inboard hinge of the top of the levee.

Construction of Levee Raises

The Proposed Project would also require raising levees to improve channel flow conveyance and meet channel freeboard criteria on existing levees in reaches A–F. The height of raised levees in these areas would vary but would not exceed 0.6 m (approximately 1.97 ft). Where levee raising is the preferred treatment, levees would be raised by extending the outboard side slope to the desired height.

Modification of Stormdrain Outfalls

Modifications to drainage outfalls generally would be limited to placement of a hardened surface (i.e., rock riprap) adjacent to existing drainage outfalls to reduce bank erosion from outfall discharges.

Levee Maintenance

Levee maintenance would consist of removing trees, vegetation, and other debris; stripping off all cracks/erosion and sloughing areas, sealing animal burrows, and removing the upper 0.9 m (3 ft) of expansive soils.

Sediment Management

Implementation of the structural flood-control features of the Proposed Project would require sediment excavation in reaches B–E to ensure that the "as-built" condition of the channel is maintained for the 100-year life of the project. The *Lower Guadalupe River Sedimentation Study* (Northwest Hydraulic Consultants 2000) indicates that most of the sediment deposition in the lower river is in reaches B–E (approximately 13,610–15,420 metric tons [15,000–17,000 tons] per year). Sediment management activities would occur in the channel during summer and fall when flow inundation in these areas is a low probability.

Vegetation Management

In addition to removal of channel vegetation as part of sediment management activities, long-term LGRP channel capacity would require initial removal of vegetation in areas of the channel to establish initial operating conditions of the project. Once the initial vegetation conditions are established, periodic removal of vegetation to control the size and growth of riparian forest, riparian scrub, seasonal and perennial wetland vegetation, and ruderal herbaceous vegetation would be required. Vegetation management would be required in areas of reach A that are not proposed for riparian planting by the Corps or California Department of Transportation (Caltrans) or for a 4.5-m (15-ft) buffer area adjacent to the low-flow channel. Vegetation generally would be removed in

alternating strips on either side of the channel to ensure that as much wildlife habitat as possible is maintained for each reach.

The goal of the vegetation management program is to balance the need to remove vegetation periodically from the flood-control channel with the need to maintain and enhance ecological functions and values in the lower Guadalupe River. The vegetation management program for reaches A–F would include initial removal of vegetation from bridge transition areas, overbank areas, and levees and would maintain buffer areas along the low-flow channel and riparian corridor. Routine vegetation maintenance would occur in subsequent years to maintain the "as built" channel condition. Woody and herbaceous vegetation would be cut or treated with herbicides in vegetation management areas to reduce vegetation heights to less than 0.3 m (1 ft). Vegetation management would occur during the summer and fall months, when flow inundation in the channel is a low probability.

Reach G would require aggressive vegetation management to remove and prevent regrowth of emergent wetland vegetation to ensure adequate flood conveyance at the SR 237 bridge. Vegetation management in reach G would involve excavating 17.5-m (57.4-ft)-wide areas on both banks adjacent to the new depressed maintenance road to a depth of approximately 1 m (3.3 ft). This shallow excavation is intended to reduce the frequency of treatment in this reach of the channel and substantially reduce the roughness created by dense stands of bulrush. Between the excavated area and a 6-m (20-ft) low-flow-channel buffer area, vegetation would be managed using herbicide treatment.

Environmental Commitments to Avoid and Minimize Adverse Project Effects during Construction and Operation of the LGRP

Under the LGRP action alternatives, environmental commitments (preventive measures) would be implemented to avoid and minimize potential adverse effects on sensitive resources, including riparian and wetland vegetation, and on aquatic resources and wildlife during construction. Environmental commitments are also included to reduce construction nuisances and disruptions on nearby residences and businesses and on the transportation system. These environmental commitments, described in chapter 2 of the Final EIR, include:

- a vegetation protection plan,
- a SWPPP,
- an erosion and sediment control plan,
- a spill prevention and response plan,
- a soil management plan,
- a hazardous and toxic materials contingency plan,

- a construction-area fish management program,
- construction period limits,
- measures to comply with the Migratory Bird Treaty Act,
- measures to implement BAAQMD's feasible control measures for PM10 emissions from soil removal activities,
- a traffic control plan,
- a cultural resources management plan,
- contact with service providers before construction, and
- noise-reducing construction practices.

The requirements associated with these environmental commitments would be included in the construction contractor's plans and specifications. The environmental commitments are identified and described chapter 3 of the MMP.

Additional Mitigation Measures to Avoid, Minimize, or Compensate for Adverse Project Effects during Construction and Operation of the LGRP

Additional mitigation measures, as needed, to reduce project impacts to less-than-significant levels are described in chapter 3 and 4 of the Final EIR and chapter 3 of the MMP. These additional measures include structural features to minimize flooding in Alviso, minimize hydraulic effects on Alviso Slough, and minimize effects on Cargill's salt production facilities in the baylands. They also include compensatory measures to replace wetland and riparian habitats that would be disturbed by construction and maintenance operations.

- Mitigation Measure HH-1: Construct West-Perimeter Levee Around Alviso
- Mitigation Measure HH-2: Construct Alviso Slough Overflow Weir and Harden Pond A6 Levee
- Mitigation Measure HH-3: Pump Cargill Salt Ponds and USFWS Wildlife Refuge
- Mitigation Measure HH-4: Manage Vegetation in Alviso Slough from UPRR Downstream to Overflow Weir
- Mitigation Measure WQ-1: Develop and Implement a Mercury Monitoring Plan
- Mitigation Measure V-1: Replace or Compensate for Loss of Riparian and Wetland Habitat
- Mitigation Measure V-2: Additional Replacement or Compensation for Loss of Riparian and Wetland Habitat

- Mitigation Measure W-1: Avoid Nesting Raptors and Birds During Construction and Maintenance
- Mitigation Measure W-2: Provide an On-Site Biologist During Construction Phase
- Mitigation Measure F-1: Provide Fish-Passage Connection
- Mitigation Measure LU-1: Install Public Safety Measures
- Mitigation Measure CR-1: Monitor all Excavation for Cultural Resources
- Mitigation Measure CR-2: Avoid Vibrational Impacts on the Alviso Historic District
- Mitigation Measure CR-3: Restrict Sites Used for Staging Areas
- Mitigation Measure CR-4: Avoid Impacts on Sensitive Subsurface Archaeological Resources

Chapter 3 of the MMP identifies the LGRP impacts, mitigation objectives, environmental commitments, additional mitigation measures, location of measures, monitoring and reporting requirements, timeframe for implementing the measures, and the entity responsible for implementing the mitigation measures.

Chapter 3

Mitigation Monitoring and Adaptive Management

Monitoring and Adaptive Management Objectives

The LGRP mitigation and monitoring objectives include:

- provide ongoing monitoring of mitigation measures, where applicable, throughout the life of the Proposed Project to assure that the actual benefits of mitigation measures comply with mitigation requirements;
- provide a mechanism for implementing corrective actions in the event that mitigation measures do not meet the performance standards established for the Proposed Project; and
- provide annual reporting of monitoring results for applicable environmental commitments and mitigation measures.

The adaptive management objectives are to ensure that implemented mitigation measures will:

- replace the amount, quality and value of riparian and wetland habitat removed by project construction;
- provide a mechanism for modifying mitigation approaches depending on the ability to meet performance standards;
- allow successful migration of anadromous fish through the LGRP area;
- prevent fish from being stranded in sediment management areas of the Project; and
- prevent the accumulation of mercury laden sediments in the Cargill Salt Ponds.

Monitoring and Reporting

The LGRP Final EIR presents environmental commitments that the District has incorporated into the LGRP design to ensure the project would avoid or minimize impacts on lower Guadalupe River resources. To ensure that these measures are implemented during LGRP construction, monitoring and/or reporting requirements are applied to the commitments as if they were mitigation measures. Monitoring and reporting requirements for mitigation measures recommended to avoid, reduce or compensate for specific LGRP impacts are presented in a similar manner. Table 3-1 provides a general overview of how environmental commitments and mitigation measures will be implemented, the entity responsible for implementation, the location of measures, monitoring and reporting requirements, and timing of implementation. Specific discussions of mitigation measures and monitoring and reporting requirements are also provided. Table 3-2 links environmental commitments and mitigation measures with specific performance standards and indicators.

Environmental Commitments

The LGRP has incorporated specific environmental commitments into the Proposed Project that will be incorporated into the project design. The purpose of making these environmental commitments is to avoid or minimize potential environmental impacts that could occur during construction or regular maintenance of the Proposed Project. These commitments are generally consistent with the District's standard BMPs and commitments established for the Downtown Guadalupe River Project.

Vegetation Protection Plan

A vegetation protection plan will be prepared and implemented as part of the best management practices (BMPs) included in the LGRP's construction plans and specifications. The vegetation protection plan will include measures to protect vegetation during construction. Before project construction, plastic barricade fencing will be erected, or similar measures will be taken, along construction-area boundaries to protect the vegetation to be avoided. If any protected trees are damaged during construction, they will be trimmed under the direction of a qualified arborist to minimize the risk of disease. Trees not approved for removal but damaged beyond recovery during construction will be replaced with trees of the same species or another species listed on the mitigation plans and specifications in a riparian forest or SRA cover vegetation mitigation area. Replacement ratios will be determined in consultation with USFWS. The selected construction contractor(s) will be responsible for implementing the plan with District oversight.

Monitoring and Reporting

Prior to construction, the District will conduct a "walk through" with the selected contractor to ensure that vegetation barricades are installed at the proper locations. The District will conduct weekly surveys to ensure that barricades are still in place and document incursions into the protected areas. Protected areas are located primarily at the following locations:

1) adjacent to grade control weirs in reach A;

2) adjacent to the low-flow channel vegetated buffer areas in reaches A – G;

3) at riparian mitigation planting areas in reaches A, B, and C (for planting conducted by the District, Corps, and Caltrans);

4) adjacent to designated sediment management and vegetation management areas as identified in the LGRP Engineers Report;

5) adjacent to levee construction areas that involve construction on the inboard levee slope; and

6) adjacent to Alviso Slough weir structure (Mitigation Measure HH-2).

If a protected tree is damaged, the contractor must notify the District immediately and within one week submit a report from a certified arborist about the condition of the tree and measures to be taken to, if possible, to save the tree. Upon District approval, the contractor shall implement the recommendations of the arborist report at their expense. If wetland revegetation in protected areas is affected by construction it will be replaced in pond A4 or restored on site.

After completion of the construction activities, the District will submit a report to the USFWS detailing incidental damage to protected trees and wetland vegetation and a plan to mitigate, if necessary, for those damages. Mitigation and monitoring requirements for damaged trees will be the same as for riparian forest or SRA cover vegetation.

Stormwater Pollution Prevention Plan

The LGRP is subject to stormwater quality regulations established under the NPDES, described in Section 402 of the CWA. In California, the NPDES program requires that any construction activity disturbing 5 or more acres comply with the statewide general permit, as administered by the SWRCB. The general permit requires elimination or minimization of non-stormwater discharges from construction sites and the development and implementation of a SWPPP for the site. The primary elements of a SWPPP are descriptions of:

- site characteristics, including runoff and streamflow characteristics and soil erosion hazard and construction procedures;

- guidelines for proper application of erosion and sediment control BMPs, including vegetative and structural practices, which are to be delineated on a topographic map;
- measures to prevent toxic materials spills; and
- housekeeping practices on the construction site.

The SWPPP also specifies that the extent of soil and vegetation disturbance will be minimized by control fencing or other means and that the extent of soil disturbed at any given time will be minimized. The SWPPP must be retained at the construction site. Implementation of the SWPPP will be monitored during LGRP construction; on completion of construction, the SWRCB will be notified that all state and local requirements were met.

Monitoring and Reporting

Prior to construction, the District will conduct a "walk through" with the selected contractor to ensure that BMPs are installed at the proper locations. The District will conduct weekly surveys to ensure that BMPs are still in place and document non-compliance issues.

The District will notify the contractor immediately if there is a compliance issue. Within one week the contractor submit a report outlining the actions taken to be in compliance with the SWPPP.

After completion of the construction activities, the District will submit a notice to the SWRCB indicating that the all state and local requirements were met.

Erosion and Sediment Control Plan

As discussed previously, the SWPPP includes measures to minimize erosion and sediment movement into the river. Increased sediment input to a stream has the potential to adversely affect aquatic species and their habitat. An erosion and sediment control plan will be prepared and implemented by the selected contractor(s). The District will oversee implementation of the erosion and sediment control plan. Elements of the plan will require contractors to:

- conduct all construction work in accordance with site-specific construction plans that minimize the potential for sediment input to the stream;
- identify with construction fencing all areas that require clearing, grading, revegetation, or recontouring and minimize the extent of areas to be cleared, graded, or recontoured;
- grade spoil sites to minimize surface erosion and apply erosion control measures as appropriate to prevent sediment from entering watercourses or the stream channel, to the extent feasible;

- mulch disturbed areas as appropriate and plant with appropriate species as soon as practicable after disturbance; and
- avoid operating equipment in flowing water by using temporary cofferdams or some other suitable diversion to divert channel flow around the channel and bank construction area.

Monitoring and Reporting

Prior to construction, the District will conduct a "walk through" with the selected contractor to ensure that BMPs are installed at the proper locations. The District conduct weekly surveys to ensure that BMPs are still in place and document non-compliance issues.

The District will notify the contractor immediately if there is a compliance issue. Within one week the contractor submit a report outlining the actions taken to be in compliance with the SWPPP.

Spill Prevention and Response Plan

As discussed previously, the SWPPP includes measures to prevent spills of toxic materials. Such spills have the potential to adversely affect aquatic species. The selected contractor(s) will prepare and implement a spill prevention and response plan that regulates the use of hazardous materials, such as the petroleum-based products used as fuel and lubricants for equipment and other potentially toxic materials associated with LGRP construction. The District will oversee implementation of the spill prevention and response plan. Elements of the plan will assure that:

- workers will be trained to avoid and manage spills;
- it will be established and implemented before LGRP construction and will include strict on-site handling rules to keep construction and maintenance materials from entering the river;
- all spills will be cleaned up immediately and appropriate agencies notified of any spills and cleanup procedures;
- staging and storage areas for equipment, materials, fuels, lubricants, solvents, and other possible contaminants will be located outside the river's normal high-water area;
- vehicles will be removed from the river's normal high-water area before refueling and lubricating;
- any leaking vehicles will be removed from work areas immediately; and
- equipment will not be operated in flowing water.

Monitoring and Reporting

Prior to construction, the District will conduct a "walk through" with the selected contractor to ensure that BMPs are installed at the proper locations. The District conduct weekly surveys to ensure that BMPs are still in place and document non-compliance issues.

The District will notify the contractor immediately if there is a compliance issue. Within one week the contractor submit a report outlining the actions taken to be in compliance with the SWPPP.

Soil Management Plan

The soil management plan includes protocols for classifying the content of wastes in soil. These protocols are based on standard analytical tests used for the disposal of material at appropriately licensed disposal sites (CH2M Hill 1994). The soil management plan also provides criteria for classification of material considered inert, based on California's standard Waste Extraction Test (WET) procedures, as well as procedures for disposal and reuse of these materials. Before disposal, confirmation sampling for all constituents of concern, including metals, hydrocarbons, and polynuclear aromatic hydrocarbons, will be conducted and the soil classified pursuant to the criteria outlined in the approved soil management plan.

Before project implementation, the soil management plan will be updated to reflect the final project design and to incorporate input from the SFBRWQCB regarding management of soils containing elevated mercury concentrations. The updated soil management plan will be submitted to the SFBRWQCB for approval before implementation.

The following additional restrictions on soil management will be included in the soil management plan submitted to the SFBRWQCB for its approval:

- Sediments with mercury concentrations that exceed hazardous waste criteria under federal or state law must be disposed off-site in appropriately licensed disposal sites. The determination of hazardous properties will comply with all applicable statutes and regulations pertaining to hazardous wastes.
- Excavated soils with mercury concentrations not exceeding hazardous waste criteria but greater than 1 milligram per kilogram (mg/kg) may not be reused on site unless such soils are placed above the low-flow channel or in adjacent areas where frequent exposure to overbank flow is not anticipated, above the water surface elevation defined by the 3-year recurrence interval.
- Excavated surfaces above the 3-year recurrence interval elevation that contain mercury concentrations higher than hazardous waste levels will be overexcavated and replaced with soils meeting the above criteria for on-site reuse. Excavated surfaces below the 3-year recurrence interval elevation that

contain mercury concentrations greater than 1 mg/kg will be overexcavated and replaced with clean imported soil.

- The limitations on on-site reuse of excavated soils and sediments will also apply to operation and maintenance activities throughout the life of the LGRP.

The 1 mg/kg requirement is based on regulatory guidance from the SFBRWQCB (SFBRWQCB 2000) that states that reducing bank sediment concentrations of mercury to 1 mg/kg or less will reduce the water-column concentration of total recoverable mercury. Water quality in the project area presently exceeds water quality control plan (Basin Plan) numeric water quality objectives for mercury. Therefore, incorporation of the proposed soil reuse restrictions will result in improved water quality under post-project conditions.

Monitoring and Reporting

At the completion of construction or periodic sediment removal activities the District shall submit a report to the SFBRWQCB documenting the results of the soil testing. The report shall quantify the volume of materials that were required to be disposed of offsite and identify the disposal site that received these materials.

Hazardous and Toxic Materials Contingency Plan

Disposal of material excavated from all hazardous, toxic, and radioactive waste (HTRW) sites discovered within the project limits of the LGRP will require special consideration. The District will develop a contingency plan outlining a course of action in the event that previously unidentified HTRW sites are uncovered during construction. This contingency plan will outline the immediate course of action to follow if HTRWs are uncovered.

Monitoring and Reporting

Based on the soils testing described previously or observations during earthmoving activities, the Contractor shall stop work and immediately notify the DTSC, the SFWQCB, and the District if they encounter HTRWs.

Construction-Area Fish Management Program

A worker education program will be undertaken to emphasize the importance of protecting chinook salmon and steelhead trout and their proposed designated critical habitat. Any activity that temporarily diverts flow from any segment of the river would require implementation of the following constraints:

- Before flow is diverted, culverts and siphons will be in place so that flow to river segments downstream of the construction site will not be interrupted.
- Flow will be incrementally diverted from the affected river segment at the upstream boundary, with diversion progressively increasing over a 4-hour period in the following increments: 50%, 75%, 90%, 95%, and 100%. An incremental reduction in flow will allow fish in the affected river segment to move downstream. Sufficient flow will be maintained through bypass channels, culverts, or siphons employing gravity flow to allow consistent streamflow in the downstream segments and provide unimpeded passage of juvenile chinook salmon and steelhead during construction. Any pumps used for flow diversion will be screened in a manner consistent with the NMFS Fish Screen Criteria for Anadromous Salmonids. Pumping would only occur when other preferred methods (e.g., bypass channels, culverts, or siphons) were determined to be impractical. The use of pumps, if necessary, would be restricted to the June 15 to September 1 period. Bypass channels would be lined with cobble, plastic, or other suitable material to control erosion and prevent the mobilization of fine sediments.
- Adequate fish passage conditions would be met by maintaining contiguous flows, avoiding the creation of vertical drops in excess of 6 inches, and maintaining suitable water velocities (i.e., 8 fps or less) and water depths (minimum of 1 foot).
- All native aquatic vertebrates and larger invertebrates will be moved by a qualified fisheries biologist before dewatering.
- Fish will be removed from pools remaining after flow is diverted from the river segment. A method to capture stranded fish will be developed cooperatively by the District, NMFS, and DFG. Qualified fish biologists will transport captured fish immediately to a flowing segment of the river. Protocol for capture and release will be developed in cooperation with NMFS and DFG. Fisheries biologists will contact NMFS immediately if any steelhead or chinook salmon are found dead or injured (except for spawned-out adult chinook salmon).
- Adult chinook salmon are likely to arrive at cofferdam sites before the end of construction on October 15. If necessary, upstream passage for chinook salmon and other salmonids will be provided through or around construction sites from June 15 through September 1. The need to provide passage will be based on the occurrence of more than 25 adult chinook salmon, flow conditions, and cooperative assessment of passage needs by the District, NMFS, and DFG. After September 1, the District will ensure that cofferdams are constructed to allow for uninterupted passage of migrating adults around construction sites and dewatered stream reaches. Occurrence of adult chinook salmon may be based on results of upstream migrant trapping conducted by the District as part of Guadalupe River watershed anadromous fish studies.

Monitoring and Reporting

The District shall supervise the installation of cofferdams and fish passage facilities during construction to ensure that the facilities meet the specified fish passage criteria. The District shall submit a report to NMFS and DFG, by November 15 of each construction year, identifying when and were cofferdams and fish passage facilities were installed, when these facilities were removed and the channel rehabilitated, and number and species of any aquatic animals moved. Construction-area fish management measures would be required in reach A at up to 6 grade control weirs in reach A, at invert stabilization locations under LGRP bridges, and potentially at the SR 237 bridge replacement site.

Construction Period Limits

In-channel construction, including riverbank and channel-bed construction, will be limited to the summer low-precipitation period (May 1–October 15) to reduce the likelihood of adverse effects on rearing juvenile steelhead and chinook salmon and on adult fish migrating to upstream spawning areas. Project construction will also be subject to the following constraints:

- Construction requiring stream dewatering, stream crossings, or work in the channel bed cannot commence before May 1.
- Work can commence on May 1 only if the stream-monitoring criteria are satisfied by that date. Stream monitoring criteria include monitoring to determine whether average daily water temperatures have exceeded 68°F for at least 5 consecutive days. Generally, conditions for steelhead and chinook salmon decline when water temperatures exceed 68°F in spring. Specific details pertaining to stream monitoring methodologies, such as monitoring equipment and the frequency and location where monitoring is conducted, and specific reporting requirements, will be coordinated with NMFS and DFG.
- Should stream-monitoring criteria not be met, channel work and stream dewatering will not be allowed to commence until June 1. In the event that in-channel construction occurs from September 1 through October 15, the District will ensure that coffer dams are constructed to allow for uninterrupted passage of migrating adults around construction sites and dewatered stream reaches.
- The need to provide passage for adult chinook salmon from June 15 through September 1will be based on the presence of adult chinook salmon, flow conditions, and a cooperative assessment of passage needs by the District, NMFS, and DFG. Construction outside the summer low-precipitation period will require previous approval from DFG and NMFS.
- Bypass channels, culverts, and siphons employing gravity flow will be the primary methods used to divert streamflow. However, if site conditions make it impractical to employ one of these methods, the District may use appropriately screened pumps to divert stream flow. The use of pumps will

be limited to the June 15 to September 1 period to avoid effects on migrating adult and juvenile chinook salmon and steelhead.

Monitoring and Reporting

The District shall monitor construction activities on a monthly basis to ensure that in channel work is conducted in compliance with this commitment. The District shall notify NMFS and DFG three (3) working days in advance of in stream work commencing and provide data documenting that the stream monitoring criteria has been met.

Measures to Comply with the Migratory Bird Treaty Act

The LGRP will be constructed inside habitat used by migratory birds. The project will be subject to the following constraints:

- During project construction, the District will not pursue, hunt, attempt to take, kill, capture, collect, possess, or offer for sale any migratory bird, including feathers, parts, nests, or eggs.
- Migratory birds, eggs, and active nests will be avoided by removing potential nesting vegetation inside the construction area boundaries before or after the February 16–July 31 migratory-bird nesting season.
- Barricade fencing erected as part of the Vegetation Protection Plan will protect nesting areas located outside of the construction area boundaries.
- If construction is initiated during the February 16–July 31 migratory-bird nesting season, a qualified biologist will survey the construction area for eggs or young migratory birds just before construction.
- If eggs or migratory birds are found inside the construction area boundaries, the District will develop protective measures and inform DFG of its actions.

Monitoring and Reporting

Prior to construction, each season, the District will send a letter to DFG, at least three (3) working days in advance, documenting that pre-construction surveys for eggs and young birds have been completed and protective measures, if needed, have been implemented to ensure breeding success.

Measures to Implement BAAQMD's Feasible Control Measures for PM10 Emissions from Soil Removal Activities

The following list of measures for controlling emissions of PM10 will be implemented during the construction phase of the project. These measures are

contained in the BAAQMD's Feasible Control Measures for PM10 Emissions from Soil Removal Activities (Bay Area Air Quality Management District 1996a).

- Water all active construction sites at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 ft of freeboard.
- Pave, apply water 3 times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

Monitoring and Reporting

The District will include the BAAQMD's PM10 control measures in the bid specification package to ensure that contractors are aware of the requirements. The District shall routinely monitor the construction site to ensure that the measures are being implemented. The District shall immediately notify the construction contractor if there is a non-compliance issue.

Measures to Address Traffic-Related Effects

The contractor(s) will submit a traffic control plan and will be subject to the following constraints:

- Before the onset of construction, signs with the construction periods clearly displayed will be posted to warn commuters of potential construction delays.
- During construction, signs will be posted at access points to major roadways to notify drivers of alternative routes. This measure will help to divert traffic around potentially congested areas.

Monitoring and Reporting

The District will prepare a traffic control plan and submit it to the Cities of Santa Clara and San Jose as well as Caltrans at least 60 days before the start of construction. The District will post the required warning signs at least 30 days prior to construction and will routinely check to make sure that the signs are in place and visable. The District will replace signs that are stolen, damaged, or vandalized as needed.

Measures to Address Cultural Resources Effects

Because of the documented presence of Native American burial grounds within close proximity of project excavation and construction activities, a monitor representing the Native American community and an archaeologist meeting the Secretary of the Interior's Standards for Professional Archeologists will monitor the project during ground-disturbing activities in areas level with or below the foot of the levees. The project will be subject to the following constraints:

- If a prehistoric archaeological site should be discovered, work will stop at the site and the site will be evaluated for significance under National Register of Historic Places (NRHP) criteria.
- If human remains of Native American origin are discovered during project construction, procedures identified in the California public health and safety codes will be followed. These procedures include notifying the county coroner and the Native American Heritage Commission (NAHC). The NAHC will appoint a "most likely descendant" to make recommendations for treatment of the remains. Work in the area will be stopped until the site is treated.
- If prehistoric or historic archaeological sites that appear eligible for the NRHP are discovered, procedures stipulated under implementing regulations for the National Historic Preservation Act (NHPA) (36 CFR 800) will be followed. These procedures will include consulting with the State Historic Preservation Officer (SHPO) to confirm eligibility of the site(s) for the NRHP and development of a memorandum of agreement that specifies treatment for the site(s). Treatment could comprise data recovery, site avoidance, or possibly capping the site to avoid further impacts.

Monitoring and Reporting

The District will monitor construction activities in potentially sensitive areas. The District will notify the appropriate Native American community at least 60 days in advance of construction activities so that a Native American monitor can be arranged. If human remains or artifacts are found work shall stop and the appropriate agencies notified by the entity finding the remains or artifacts (District monitor, Native American monitor, or Contractor). The other responsible entities shall also be notified to ensure that they are all aware of the find.

Contact with Service Providers Before Onset of Construction

The need to reroute or remove any service structures will be accommodated in the project design before the onset of construction. Service providers will be contacted in advance of construction activities so that they can reroute services or notify customers of impending service interruptions.

Monitoring and Reporting

The District shall notify service provides when the 90% percent design drawings are complete and it is apparent that the Proposed Project will require interruption or realignment of existing infrastructure. The District shall notice, in writing, service providers at least 60 days in advance of construction activities for activities that may temporarily interrupt service.

Noise-Reducing Construction Practices

To avoid significant adverse health effects related to noise, the City has established the following objectives as acceptable noise levels: 55 decibels day-night level (dB-Ldn) as the long-term exterior noise level, 60 dB-Ldn as the short-term exterior noise level, 45 dB-Ldn as the interior noise level, and 76 dB-Ldn as the maximum exterior noise level. Noise effects were evaluated based on standards specified in the San Jose General Plan and the Santa Clara General Plan (City of San Jose 1994, City of Santa Clara 1992). In summary, if construction is anticipated to exceed 60 dB-Ldn at noise-sensitive land uses, the effect of the project on noise is considered significant.

The District and its contractors will employ the following noise-reducing construction practices:

- All construction will be done between the hours of 7 a.m. and 5 p.m.
- All equipment will have sound-control devices no less effective than those provided on the original equipment, and all equipment will be operated and maintained to minimize noise generation.
- No equipment will have an unmuffled exhaust.
- The District will designate a "noise abatement coordinator" who will be responsible for responding to any local complaints about construction noise. The telephone number of the noise abatement coordinator will be posted at the construction site and included in notices sent to residents within 300 m (1,000 ft) of the lower Guadalupe River regarding the construction schedule. The noise abatement coordinator will determine the cause of noise complaints (e.g., starting too early, bad muffler) and will require that reasonable measures to correct the problem be implemented. The District will be responsible for posting and providing notices of construction schedules to residents, and will give the noise abatement coordinator's name and telephone number to the directors of the City Department of Planning, Building and Code Enforcement; the City of Santa Clara Planning and Inspection Department; and the Santa Clara County Planning Office.

Monitoring and Reporting

The District shall notice, by mail, residents with in 300 m of the project at least 30 days before the start of construction of the project. The District shall notify

residents again by mail 1 week in advance of construction that will occur in the immediate vicinity (100 m) of their residence.

Mitigation Measures

Additional mitigation measures, as needed, to reduce Proposed Project impacts to less-than-significant levels are described in the following sections. These additional measures include structural features to reduce flooding impacts in Alviso, minimize hydraulic effects on Alviso Slough, and minimize effects on Cargill Salt Ponds. They include compensatory measures to replace wetland and riparian habitats that would be disturbed by LGRP construction and maintenance operations. They also include measures to ensure that fish migration corridors are not blocked and fish are not stranded in sediment management areas. Monitoring and reporting requirements are addressed for each mitigation measure.

Mitigation Measure HH-1: Construct West-Perimeter Levee Around Alviso

To prevent Guadalupe River floodwaters from flowing around the levee system to Alviso, the District will improve the existing levee on the east bank of Alviso Slough from approximately the UPRR trestle downstream to the northeast corner of the County marina. This will prevent overtopping of the marina's parking area and adjacent levees.

Monitoring and Reporting

The District will construct the Alviso levee improvements during construction of the Proposed Project. The District will notify the Corps when the LGRP is complete and certify that the terms of the LCA agreement have been met.

Mitigation Measure HH-2: Construct Alviso Slough Overflow Weir and Harden Pond A6 Levee

The District will construct an overflow weir along Alviso Slough. This weir will be approximately 300 m (1,000 ft) long and will be located immediately across from Alviso in the same location as the existing natural low spot in the Cargill levee. The levee will be designed to limit peak discharges to Alviso Slough at the existing levels. Under existing conditions, flows of 193 cms (6,800 cfs) or greater result in spillage over this low spot along the levee; this will not change under the Proposed Project. Construction of the overflow weir will provide a benefit because it will prevent downcutting and potential failure of the levee at

this low point. The construction footprint of this structure, including entrance and exit aprons, is approximately 15.2 by 300 m (50 by 1,000 ft).

To prevent downcutting of the levee separating Ponds A5/A7 and A6 by cumulative floodflows, concrete cellular mattresses will be used to protect overflow areas along this levee.

Monitoring and Reporting

The District will construct the overflow weir during construction of the Proposed Project. The District will notify the Corps that LGRP project when complete and certify that the terms of the LCA agreement have been met.

Mitigation Measure HH-3: Pump Cargill Salt Ponds

The District will pump floodwaters from the Cargill Salt Ponds to reduce the depth and duration of flood flows in Ponds A5, A7, A8D, and A8W to a lower level than will be expected in these ponds under existing conditions (figure 3-1). Temporary 1.42-cms (50-cfs) pumps will be operated on each pond for up to 12 days once pumps are operational at pump sites following a flood event (estimated to be approximately 2 weeks for mobilization). Approximately 2 feet of floodwater will be pumped from pond A6 in a similar manner following a design flood event.

This measure will also require that Pond A8D be pumped to eliminate floodwaters from the pond before the western snowy plover breeding season. The temporary pump in this pond will be run continuously until floodwaters are evacuated completely.

Monitoring and Reporting

The District will pump floodwaters as needed during the life of the Proposed Project to ensure that ponds A8D and A6 are pumped dry following a design flood event and prior to the western snowy plover nesting season. The District will notify the salt pond owner when pumping has been completed and will submit a report to the USFWS and NMFS documenting the result of floodwater pumping and the post-flooding pond condition.

Mitigation Measure HH-4: Manage Vegetation in Alviso Slough from UPRR Downstream to Overflow Weir

The District will aggressively manage vegetation on the east bank of Alviso Slough extending approximately 225 m (738 ft) from the UPRR bridge opposite the location of the overflow weir. From an access road constructed along the toe

of the levee, vegetation will be removed using a shallow dredging technique that removes approximately 1 m (3.3 ft) of sediments. From the limits of the shallow dredging area to 6 m (19.7 ft) from the active channel, vegetation will be controlled with the use of herbicides certified for wetland use.

Monitoring and Reporting

The District shall manage vegetation for the life of the Project. No special reporting is required for this mitigation measure. This and other project maintenance activities will be consistent with the District's SMP requirements and reported along with the District's other maintenance to the appropriate agencies in accordance with the SMP.

Mitigation Measure WQ-1: Develop and Implement a Mercury Monitoring Plan

The District will develop and implement a mercury monitoring plan, in consultation with the SFBRWQCB, to monitor floodwaters and suspended sediments. The purpose of the plan is to determine the concentration of mercury in lower Guadalupe River floodwaters to determine whether they exceed the TMDL objective concentration. This information would then be used to determine whether corrective actions are needed in Cargill Ponds A8W, A5, A6, A7, or A8D to reduce mercury concentrations. The District will initially collect water and suspended sediment samples during various flood events to characterize and interpret the mercury concentrations in lower Guadalupe River floodwaters (i.e., is mercury concentration linearly proportional to suspended sediment concentration or proportional to a fraction of the suspended sediment, and would concentration limits be exceeded). Once flood flow concentrations are known, the District will estimate the potential mercury load discharged to the ponds by measuring the volume of floodwater in each pond and multiplying by the appropriate concentration, determined by the previous analyses.

If it is determined, by estimation or actual monitoring, that inundation by floodwaters in the Cargill Salt Ponds caused mercury concentrations in pond sediments to increase more than 10% over the pond's baseline conditions, or if the increase causes the sediment concentration to exceed the TMDL objective concentration of 0.4 mg/kg for bay sediments, whichever is more restrictive, the accumulated sediments would be removed and disposed of in accordance with the soil management plan described in chapter 2, "Proposed Project and Alternatives."

Monitoring and Reporting

Short-Term Monitoring Period

Short-term monitoring will include annual site inspections during years 1-5 following project construction. The monitoring of accumulation of mercury laden sediments in the Cargill Salt Ponds during the short-term monitoring period will include:

- collection of background mercury concentration data in the salt pond sediments;
- collecting background mercury concentrations in large flows in the Guadalupe River (It is likely that during the short-term monitoring period that a substantial flood that overflows in to the salt pond will not occur); and
- collecting water and sediment concentration data and depth of accumulation data if a flood occurs that is large enough to flow into the Cargill ponds.

Performance Standards. No specific performance standards have been identified for the measurement of suspended solids in flood flows. The purpose of the proposed monitoring program is to assist in determining if a performance standard is needed on the lower Guadalupe River and if so, develop an adequate approach to addressing mercury accumulation effects downstream of the lower Guadalupe River.

Monitoring Schedule. Monitoring flood flow mercury concentration will occur during a representative sample of flooding conditions on the lower Guadalupe River as hydrologic conditions dictate.

Monitoring Methods. The District will continuously monitor flow. In addition, the District will monitor flood flow mercury concentrations. Monitoring will occur at lower Guadalupe River locations and with methods that are approved by RWQCB staff..

Reporting Schedule. Reporting of mercury concentration data in lower Guadalupe River flows to the RWQCB staff will occur within 6 months of collection of the data. Decisions about further mitigation and monitoring steps will be based on data conclusions following the monitoring period. In general, at least 3 separate sets of monitoring data collected during 3 separate flood events will be needed to make decisions about the need for further mitigation and monitoring steps.

Long-Term Monitoring Program

The need for long-term monitoring (i.e., years 6 through 100, or until mitigation goals are achieved) will be determined during the short-term monitoring period.

Mitigation Measure V-1: Replace or Compensate for Loss of Riparian and Wetland Habitat

The District will replace or compensate for the loss of 0.87 hectare (2.16 acres) of riparian vegetation and 10.94 hectares (27.03 acres) of wetland vegetation and other waters of the United States from levee construction and vegetation and sediment management required under the LGRP. To implement this mitigation, the District will develop and carry out a planting plan. The planting plan will take into consideration the quality and type of riparian and wetland habitat losses, and the mitigation that will be provided for the lower Guadalupe River under the District's SMP. Mitigation of impacts related to construction of flood-control structures will not be covered under the SMP.

The implementation plan will be developed by the District to ensure that required mitigation plantings are successful. The implementation plan will identify the exact location and quantity of mitigation planting areas; the quantity, size, and type of mitigation plantings; installation and maintenance techniques; and monitoring and reporting requirements. For construction-related impacts on riparian and wetland habitat, the District will replant riparian vegetation in reaches A, B, and C and wetland vegetation in District Pond A4. For initial and routine vegetation and sediment management–related impacts, the District will mitigate impacts on riparian and wetland habitat with mitigation included in the SMP mitigation package and with additional mitigation proposed under the LGRP.

Mitigation of Riparian and Shaded Riverine Aquatic Overhead Cover.

Levee construction impacts on riparian vegetation under the Proposed Project would be approximately 0.87 hectare (2.16 acres) (0.75 hectare [1.86 acre] of riparian forest and 0.12 hectare [0.30 acre] of riparian scrub). Loss of this amount of riparian vegetation would be replaced at on-site locations within the LGRP area.

On-site mitigation areas will include areas within the project levees in reaches A, B, and C.

Overall, the streamside mitigation areas in reaches A and B would increase the functions and values for terrestrial species by providing a more diverse canopy structure and by providing a near-continuous corridor of riparian vegetation adjacent to the low-flow channel. These mitigation areas would also increase the functions and values of the existing habitat for aquatic species by providing overhead and instream SRA cover for aquatic species. The streamside mitigation areas in reaches A and B would connect the lower reaches of the Guadalupe River (i.e., reaches C–G) and the proposed mitigation areas associated with the other flood protection projects along the Guadalupe River and Guadalupe Creek.

On-Site Riparian Mitigation Areas

The District will provide 3:1 mitigation for impacts to riparian habitat associated with the LGRP. This mitigation ratio was agreed upon in consultation with DFG. Based on this mitigation ratio, the District proposes to mitigate the 0.87 hectare (2.16 acres) of construction-related impacts by providing at least 2.62 hectares (6.48 acres) of riparian mitigation at on-site mitigation areas.

Prior to agreeing to provide 3:1 mitigation, the District developed an assessment method to determine riparian impacts and mitigation requirements for the LGRP. This methodology was developed as a means of determining a reasonable approach to mitigating construction-related impacts on riparian habitat in the LGRP and determining a mitigation ratio for impacts on riparian habitat by comparing construction-related impacts with the quality of those affected habitats. Under this previous approach, all polygons of high-quality habitat would have been mitigated at a 3:1 ratio because these areas provide the most value to wildlife and fisheries resources. Areas of moderate-quality habitat would be mitigated at 2:1 because these areas have slightly less value to wildlife and fisheries resources. The 3:1 and 2:1 ratios would have mitigated not only for the overall loss of habitat quality and quantity, but also the temporal loss of habitat. Areas of low-quality habitat would have been mitigated at 1:1 because these areas have less value to wildlife and fisheries resources.

The on-site mitigation areas in reaches A, B, and C would provide approximately 2.80 hectares (6.90 acres) of riparian mitigation for levee construction activities. This mitigation represents a ratio of approximately 3.20:1. Overall, the on-site mitigation areas in reaches A, B, and C will increase the functions and values for terrestrial species by providing a more diverse canopy structure and by providing a near-continuous corridor of riparian vegetation adjacent to the low-flow channel. The reach A mitigation area and portions of the reach C mitigation area will also increase the functions and values of the existing habitat for aquatic species by providing overhead and instream SRA cover for aquatic species. The mitigation areas in reaches A and B would connect the lower reaches of the Guadalupe River (i.e., reaches C–G) and the proposed mitigation areas associated with the other flood protection projects along the Guadalupe River and Guadalupe Creek.

The on-site mitigation areas are discussed in the following sections.

Reach A Mitigation Area. The Reach A mitigation area is located between U.S. 101 and Airport Parkway. In Reach A, approximately 0.76 hectare (1.88 acre) of riparian mitigation will be implemented. Mitigation will include planting riparian vegetation on the east and west banks of the river within 4.6 meters (15 feet) of the low-flow channel and planting the bank and lower floodplain associated with the levee setback area on the east bank, between U.S. 101 and Airport Island Bridge.

The District prepared a conceptual mitigation design plan for the streamside planting portion of this mitigation project site as part of the Draft EIR. This plan was reviewed by representatives of various resource agencies and the mitigation plan was revised based on agency comments. The levee setback was not initially

included as part of the conceptual design plan. Construction plans and specifications are being prepared for the streamside planting and setback levee portions of this mitigation area and will be finalized in conjunction with the final construction plans and specifications for the LGRP.

The primary goal of the Reach A mitigation project design is to create persistent riparian forest habitat and overhead SRA cover habitat. This mitigation site was designed to maximize the amount of riparian habitat that can be established based on the hydraulic limitations of this project reach.

The streamside planting design will provide approximately 0.67 hectare (1.66 acres) of riparian habitat mitigation and approximately 1,433 meters (4,700 linear feet) of overhead SRA cover. Plants will be installed on both the east and west banks at approximately 3.7 meters (12 feet) on center. All plants will be installed within 4.6 meters (15 feet) of the wetted channel perimeter. The plant palette will consist of native tree, shrub, and vine species. Plant propagation materials will be collected in the vicinity of the project or within the Guadalupe River watershed. A temporary irrigation system is proposed to provide deep watering to the plants immediately after installation and during the short-term establishment period.

The setback levee portion of the Reach A mitigation project will provide an additional 0.09 hectare (0.22 acre) of riparian mitigation on the east bank between U.S. 101 and the Airport Island Bridge. The existing bank will be set back and the bank and the lower floodplain adjacent to the future depressed maintenance road planted and seeded with an erosion control seed mix. Although these planting areas will not be located adjacent to the low-flow channel, they will increase the overall riparian habitat area in the reach, as well as in the LGRP as a whole.

Reach B Mitigation Area. The Reach B mitigation area is located between Trimble Road and U.S. 101. The District is currently preparing a conceptual mitigation design plan for this mitigation project site. Construction plans and specifications are being prepared for this mitigation project site and will be finalized in conjunction with the final construction plans and specifications for the LGRP.

Mitigation in Reach B is made possible by constructing a levee setback on the west bank approximately between station 14+100 and station 14+500. The setback levee is considered a project enhancement and is not required for flood protection purposes. The levee setback will allow the District to minimize sediment management activities in this reach and allow for the planting of riparian vegetation.

In Reach B, approximately 0.90 hectare (2.23 acres) of riparian mitigation will be implemented in the setback levee area. Mitigation plantings will be installed on the created floodplain and the lower one-third of the setback levee. Only shrub and vine species will be planted on the setback levee. The setback levee will be seeded with an erosion control seed mix. Unlike Reach A, some sediment removal may be required in Reach B on an as-needed basis. A maintenance road

will be located between the sediment removal area and the planting area to facilitate sediment removal activities.

The existing levee will be set back approximately 30 meters (98 feet) at the upstream end of the reach and the setback will average approximately 20 meters (66 feet) in other locations. The plant palette will consist of native tree, shrub, and vine species. Plant propagation materials will be collected in the vicinity of the project or within the Guadalupe River watershed. A temporary irrigation system is proposed to provide deep watering to the plants immediately after installation and during the short-term establishment period.

Reach C Mitigation Area. The reach C mitigation area is located between Montague Expressway and Trimble Road. This mitigation area will provide approximately 0.96 hectare (2.36 acres) of riparian mitigation. Construction plans and specifications are being prepared for this mitigation project site and will be finalized in conjunction with the final construction plans and specifications for the LGRP.

Mitigation activities in Reach C will consist of planting native riparian vegetation in several areas within the existing riparian corridor that are currently dominated by nonnative herbaceous vegetation (e.g., sweet fennel, poison hemlock, giant reed) and nonnative woody vegetation, (e.g., Himalayan blackberry, black walnut, weeping willow). A total of 18 planting areas totaling 0.96 hectare (2.36 acres) have been identified in Reach C. These planting areas vary in proximity to and elevation above the river.

The plant palette will consist of native tree, shrub, and vine species. Plant propagation materials will be collected in the vicinity of the project or within the Guadalupe River watershed. A temporary irrigation system is proposed to provide deep watering to the plants immediately after installation and during the short-term establishment period.

Sediment and Vegetation Management Mitigation

The remaining 0.79 hectare (1.97 acres) of riparian vegetation impact associated with sediment and vegetation management in the channel on 0.29 hectare (0.73 acre) of riparian forest and 0.50 hectare (1.24 acre) of riparian scrub were identified in the District's SMP and will be mitigated as part of the SMP mitigation package by removing giant reed from the lower Guadalupe River and in other watersheds in the District's jurisdiction and restoring riparian vegetation in these areas.

Monitoring and Reporting

Short-Term Monitoring Period.

Short-term monitoring will include periodic site inspections and annual monitoring surveys of terrestrial habitats during years 1-5 following mitigation installation. Periodic site inspections will be performed throughout the monitoring period and will include visual inspections of general plant health and vigor, irrigation system operation, and general site conditions. Annual

monitoring of terrestrial habitat will occur during the short-term monitoring period.

Terrestrial vegetation surveys during the short-term monitoring period will include the following:

- individual plant counts of mitigation plantings in all of the terrestrial habitats;
- assessments of plant health and vigor (i.e., foliage, root crown, insect infestation) in the riparian forest, SRA overhead cover vegetation, and urban forest mitigation sites;
- aerial photograph interpretation to measure the extent of SRA overhead cover vegetation; and
- annual photo documentation.

Performance Standards. Short-term (i.e., years 1–5) performance standards have been developed for riparian forest and SRA habitat types. The performance standards serve as a guide to determine whether mitigation habitats are successfully establishing and meeting mitigation goals. Performance standards will apply to each mitigation site. Each of these mitigation planting sites must achieve the short-term performance standards. The short-term performance standard for riparian habitat is plant survival. For the riparian forest and SRA habitat, the year 5 performance standard will be 50% survival of each type of original plant material (trees, shrubs, vines etc proportions of which vary for each mitigation area). Since trees and shrubs will be planted on 12-foot centers (1 plant per 144 square feet, or 302 trees/shrubs per acre), if survival drops to 50%, there will be 1 plant per 288 square feet (151 trees/shrubs per acre). In a natural system at maturity, this would still be a relatively dense forest. In addition, vines and small woody and herbaceous container plants will be planted between the trees and shrubs. Volunteer plant growth will not be included in the determination of plant survival; however, a general observation of volunteer establishment will be recorded during annual monitoring.

Monitoring Schedule. Monitoring surveys in riparian forest and SRA habitat will occur in late summer (i.e., August or September) to coincide with peak vegetative cover. Monitoring surveys will occur one time annually during years 1-5.

Photo Documentation. Photo documentation stations will be established during the final mitigation planning stages. Photographs will be taken at various locations within each mitigation area to document the establishment of mitigation plantings. The photographs will be taken at the time of the annual vegetation monitoring surveys.

Monitoring Methods

Individual Plant Counts

Individual plant counts will be used to determine plant density and species composition in the riparian forest and SRA overhead cover mitigation sites. All mitigation sites will be monitored to determine survivorship. Plant counts will include only those individuals planted as part of mitigation efforts. General observations of volunteer seedling establishment will also be recorded. Individual survival rates and densities will be determined for each species and within each plant community.

Health and vigor measurements will also be recorded for tree, shrub, and vining species; foliage, root crown, and insect infestation will be noted. The reasons why individual plants die or exhibit poor vigor will also be determined.

Aerial Photograph Interpretation

Aerial photographs will be used to determine the linear extent of SRA cover along the riverbanks. Aerial photographs will be taken in late summer of years 1-5 to coincide with peak vegetative cover. Photographs will be taken at periods of low flow to allow for an accurate determination of habitat area. The photographs shall be printed at a scale that will offer the most accurate determination of vegetative cover (e.g., 1:50 scale). The mapping of SRA cover will be field verified to ensure accuracy of the aerial photograph interpretation.

SRA cover vegetation monitoring will be required in year 5; however, this habitat type may be monitored in years 1 through 4, at the District's discretion, to confirm that the mitigation is progressing toward the fifth year performance standard.

Reporting Schedule

Riparian forest and SRA habitat and aquatic habitat monitoring results will be incorporated into one annual report. Monitoring reports will be prepared and submitted to the Corps, USFWS, DFG, NMFS, RWQCB, and other designated resource agencies by December 31 of each monitoring year.

Long-Term Monitoring Program

Long-term monitoring (i.e., years 6 through 100, or until mitigation goals are achieved) will include periodic site inspections and monitoring surveys of the specific terrestrial habitats identified below. Periodic site inspections will be performed throughout the long-term monitoring period and will include visual inspections of general site conditions. Monitoring of terrestrial habitats will occur at varying intervals throughout the long-term monitoring period. If the individual mitigation sites or habitat types do not achieve the performance standard by year 100, the District will continue to monitor these sites to determine appropriate remedial action to ensure that they do achieve the performance standards.

Performance Standards

Long-term performance standards have been developed for terrestrial habitat types. The performance standards serve as a guide to determine whether

mitigation habitats are successfully establishing and meeting mitigation goals. The long-term performance standard for riparian forest mitigation sites will be measured in terms of percent cover by native riparian tree and shrub species. The performance standard for riparian forest and SRA habitat will be 30% canopy cover by the end of year 10 and at least 80% canopy cover by the end of year 40. Riparian forest mitigation sites will also be surveyed in years 8, 10, 15, 20, 25, 30, and 35 to ensure that the cover type is progressing toward meeting the long-term performance standard. The species composition of the riparian forest will consist of tree and shrub species but no long-term performance standard for percent tree or shrub composition has been established. Native volunteer plant growth will be included in the determination of percent canopy cover.

Monitoring Schedule

Terrestrial vegetation monitoring surveys in riparian forest and SRA overhead cover vegetation, mitigation sites will occur in late summer (i.e., August or September) to coincide with peak vegetative cover. Monitoring surveys will occur during years 8, 10, 15, 20, 25, 30, 35, and 40. If the individual mitigation sites or overall habitat types do not achieve the performance standard by year 40, the District will continue to monitor these sites to determine appropriate remedial action to ensure that they achieve the appropriate performance standard.

Photo Documentation

Photo documentation stations will be established during the final mitigation planning stages. Photographs will be taken a various locations:

- within each mitigation area to document the establishment of mitigation plantings; and
- in each reach of the project to document reestablishment of riparian vegetation in disturbed areas.

The photographs will be taken at the time of the annual vegetation monitoring surveys.

Monitoring Methods

Individual Plant Counts

Individual plant counts will be used to determine plant density and species composition in the riparian forest and SRA overhead cover vegetation mitigation sites. All mitigation sites will be monitored to determine survivorship. Plant counts will include only those individuals planted as part of mitigation efforts. General observations of volunteer seedling establishment will also be recorded. Individual survival rates and densities will be determined for each species and within each plant community.

Health and vigor measurements will also be recorded for tree, shrub, and vining species; foliage, root crown, and insect infestation will be noted. The reasons why individual plants die or exhibit poor vigor will also be determined.

Aerial Photograph Interpretation

Aerial photographs will be used to determine the linear extent of SRA cover along the riverbanks. Aerial photographs will be taken in late summer of long-term monitoring years to coincide with peak vegetative cover. Photographs will be taken at periods of low flow to allow for an accurate determination of habitat area. The photographs shall be printed at a scale that will offer the most accurate determination of vegetative cover (e.g., 1:50 scale). The mapping of SRA cover will be field verified to ensure accuracy of the aerial photograph interpretation.

SRA cover vegetation monitoring will be required in year 5; however, this habitat type may be monitored in years 1 through 4, at the District's discretion, to confirm that the mitigation is progressing toward the fifth year performance standard.

Reporting Schedule

Riparian forest and SRA habitat and aquatic habitat monitoring results will be incorporated into one annual report. Monitoring reports will be prepared and submitted to the Corps, USFWS, DFG, NMFS, RWQCB, and other designated resource agencies by December 31 of each monitoring year.

Mitigation of Wetlands and Other Waters of the United States

Vegetation management and levee construction impacts on wetlands and other waters of the United States under the Proposed Project would be approximately 10.94 hectares (27.03 acres).

Impacts related to construction of flood-control features would result in the permanent loss of 1.23 hectares (3.04 acres) of tidal and nontidal wetlands and other waters of the United States, and the temporary loss of 0.84 hectare (2.09 acres) of nontidal and tidal wetlands and other waters of the United States.

Of the 16.53 hectares (40.85 acres) of wetland vegetation impacts resulting from sediment and vegetation management activities in the LGRP, a total of 7.93 hectares (19.60 acres) were identified in the SMP and will be mitigated as part of the SMP package. The impacts identified in the SMP include 2.55 hectares (6.30 acres) of nontidal wetland and 5.38 hectares (13.30 acres) of tidal wetland impacts. The SMP wetland mitigation package is described in the following section. The LGRP will affect 8.60 hectares (21.25 acres) of additional nontidal and tidal wetlands not previously identified in the SMP and will also affect 0.26 hectares (0.65 acres) of other waters of the United States. Mitigation for the additional nontidal and nontidal wetland impacts will occur in Pond A4.

The District's Pond A4 will serve as the mitigation site for all impacts to wetlands and other waters of the United States associated with project construction as well as for impacts associated with routine sediment and vegetation management. The District is currently planning for and designing wetland restoration for Pond A4, which is 121.4 hectares (300 acres); restoration

is expected to begin in 2007. The District is proposing to use a ratio of 2:1 to compensate for permanent impacts and a ratio of 1:1 to compensate for temporary impacts on wetland resources, as well as, other water of the United States. Based on a 2:1 compensation ratio for permanent impacts, the District will compensate for the permanent loss of 1.04 hectares (2.56 acres) of tidal wetlands and other waters of the United States due to construction and sediment and vegetation management activities by providing 2.08 hectares (5.12 acres) of wetland mitigation in Pond A4. Based on a 1:1 compensation ratio for temporary impacts, the District will compensate for the temporary loss of 9.19 hectares (22.71 acres) of tidal wetlands and other waters of the United States resulting from construction and sediment and vegetation management activities by providing 9.19 hectares (22.72 acres) of wetland mitigation in Pond A4. Because Pond A4 will not be restored prior to LGRP construction, the District will, in addition, remove 3 acres of exotic vegetation in the project area to compensate for the lag time between the impact and the habitat restoration.

Mitigation of Nontidal Freshwater Marsh and Seasonal Wetland

A total of 0.71 hectare (1.75 acres) of nontidal wetland impacts will occur under the LGRP, including 0.42 hectare (1.04 acre) related to vegetation and sediment management activities and 0.29 hectare (0.71 acre) because of construction-related impacts. Mitigation of the impact on 0.71 hectare (1.75 acres) of nontidal wetlands will be provided out-of-kind at a 2:1 mitigation ratio (3.5 acres) in Pond A4.

Mitigation of Tidal Freshwater Marsh

Approximately 10.23 hectares (25.28 acres) of tidal freshwater marsh habitat and other waters of the United States will be disturbed during implementation of the LGRP as a result of construction and management activities.

Mitigation of the impacts on 9.17 hectares (22.65 acres) of tidal wetlands and 1.06 hectares (2.63 acres) of other waters will be provided in Pond A4. Based on a 2:1 compensation ratio for permanent impacts, the District will compensate for the permanent loss of 1.04 hectares (2.56 acres) of tidal wetlands and other waters of the United States due to construction and management activities by providing 2.07 hectares (5.12 acres) of wetland mitigation in Pond A4. Based on a 1:1 compensation ratio for temporary impacts, the District will compensate for the temporary loss of 9.17 hectares (22.72 acres) of tidal wetlands and other waters of the United States resulting from construction and management activities by providing 8.97 hectares (22.72 acres) of wetland mitigation in Pond A4. This compensation is reasonable because of the variable quality of tidal freshwater marsh in reaches D - G (marsh habitat in reaches F and G is rated as high-quality while marsh habitat in reaches D and E are of variable quality). Please refer to the evaluation of habitat quality in the Final EIR.

Former Cargill Salt Pond A4 is bordered on the west by the Sunnyvale West Channel, on the northeast by Guadalupe Slough, and to the southeast by the Sunnyvale East Channel. This mitigation site, which was historically a tidal marsh, is expected to support tidal freshwater marsh similar to or of higher quality than the existing tidal freshwater marshes that will be affected by periodic maintenance activities in the LGRP. The District anticipates that a mosaic of

mudflat, tidal wetland, and upland habitats will be created. The restoration concept for this site includes:

- lowering the outboard levees or breaching them in strategic locations to provide full tidal action to the site; and
- placing of dredge fill and grading, in combination with natural sedimentation, to create surfaces at an elevation at which tidal wetland and upland vegetation can become established.

Monitoring and Reporting
Short-Term Monitoring Period

Wetland monitoring will be developed with the Pond A4 restoration program.

Mitigation of Ruderal Vegetation

Although the loss of ruderal vegetation is not considered a significant impact, the routine construction specifications and BMPs used by the District will restore any such vegetation. As identified in the SMP's Resource Protection Policies, Policy 8, the District will take measures to minimize erosion by minimizing vegetation removal and restoring vegetation on disturbed soils. Because of hydraulic constraints, disturbed soil surface in the LGRP project area will be revegetated by seeding grasses and forbs on the inboard side of the levee.

Monitoring and Reporting
There are no specific monitoring requirements for this mitigation measure. This and other project maintenance activities will be included in the District's SMP and reported along with the District's other maintenance to the appropriate agencies in accordance with the SMP.

Mitigation Measure V-2: Additional Replacement or Compensation for Loss of Riparian and Wetland Habitat

Construction of the Baylands Mitigation Measure will result in the loss and temporary disturbance of aquatic habitats, including wetland vegetation. Construction of the Alviso Slough overflow weir and the maintenance road will permanently affect approximately 0.17 hectares (0.43 acres) of wetlands. Temporary impacts will result from armoring of the levees and construction activity and will affect 1.35 hectares (3.34 acres) of wetlands and 2.38 hectares (5.88 acres) of other waters (salt ponds). The District proposed 2:1 mitigation for permanent impacts and 1:1 for temporary impacts to wetlands. No mitigation is proposed for the temporary disturbance to the other waters because of the lack of habitat value associated with the salt ponds. Mitigation Measure V-2 provides replacement of wetland habitat in the District's Pond A4 mitigation site for impacts associated with the Baylands mitigation measures.

Monitoring and Reporting

Wetland monitoring will be developed with the Pond A4 restoration program.

Mitigation Measure W-1: Avoid Nesting Raptors and Birds During Construction and Maintenance

Mitigation Measure W-1 applies to impacts expected to occur during the construction phase of the project. All flood protection maintenance activities will be mitigated under the SMP.

Before construction, the District will fence, or otherwise identify in the field, the boundary of all construction areas to avoid accidental entry into these areas by construction equipment.

The District will perform preconstruction surveys to determine whether nesting birds, including raptors, special-status bird species, or migratory birds, are present within or immediately adjacent to the project area. If an inactive nest is located in these areas, it will be removed before the start of the breeding season (approximately February 1). If an active raptor nest is found, a buffer zone will be created around the nest tree. The recommended buffer, as identified by DFG, is 76.2 m (250 ft). However, because of the relatively narrow width of the project area and the location and dimensions of the proposed work areas, a 76.2-m (250-ft) buffer may not be feasible in all areas. The District will maximize the buffer width around active nest sites on site-by-site basis and will consult with DFG on the buffer widths before commencing construction activities. If possible, the District will delay construction around individual raptor nests until after the young have fledged. The District will immediately cease work and contact DFG if a young bird has prematurely fledged the nest as a result of construction-related activities.

Burrowing owls are not expected to occur in the LGRP area and therefore will not be affected by construction-related actions. However, to avoid potential effects on burrowing owls, the District will implement the following measures:

- The District will perform preconstruction surveys, in accordance with the DFG code, to determine whether burrowing owls are present within or adjacent to construction areas. The surveys will be performed by the on-site biologist (see Mitigation Measure W-2) or another qualified biologist. The District will provide the results of the surveys to DFG.
- If burrowing owls are observed during the nonbreeding season (September-January), the District will avoid construction within 48.8 m (160 ft) of the active burrows to avoid disturbing or killing the owls. Other potential wintering burrows will also be monitored to ensure that no owls are affected during construction. The District may elect to exclude owls from the LGRP during the nonbreeding season by placing 1-way exit doors on all potential burrows for 48 hours, then destroying or collapsing unoccupied burrows to

prevent their use during the breeding and nonbreeding season. This exclusion method will be implemented throughout the construction period.

- If owls are observed during the breeding season, the District will fence and avoid these areas until after the breeding season.

The LGRP is located in and adjacent to habitat that may support nesting birds protected under the MBTA. Barrier fencing erected as part of the project's vegetation protection measures will also protect nesting vegetation located outside the boundaries of the construction areas. The District will remove all woody vegetation from the construction zones during the nonbreeding season (August 1-February 15) to minimize effects on nesting birds. If construction occurs during the breeding season and all affected vegetation has not been removed, a qualified biologist will survey the construction area for active nests and young migratory birds immediately before construction. If active nests or migratory birds are found within the boundaries of the construction area, the District will develop appropriate measures and will inform DFG of its actions.

Monitoring and Reporting

The District shall implement pre-construction surveys and flag buffer areas as needed. The District will conduct a walk through with the contractor prior to construction to be sure that barrier fencing has been installed as required. The District will routinely monitor the project area to ensure that construction activities are not occurring within the buffer areas. The District will report to DFG as necessary.

Mitigation Measure W-2: Provide an On-Site Biologist During Construction Phase

The District will require an on-site biologist to oversee important biological components of the project, including clearing, revegetation, conducting preconstruction surveys, placement of exclusion fencing, establishing buffers, monitoring water quality, and placing diversion structures.

Monitoring and Reporting

The District shall retain a qualified biologist to supervise construction activities.

Mitigation Measure F-1. Provide Fish-Passage Connection

To reduce the potential for the stranding of fish in sediment excavation areas, the District will provide a passive connection between the excavated channels and the low-flow channel in reaches B, C, D, E, and G or in other areas where

excavations are proposed in the future, thereby ensuring that ponding in excavated areas is avoided. The low-flow channel connections will be located at the downstream end of sediment excavation areas and will be designed to prevent ponding in excavated areas by channeling water out of these areas and back to the main river. The District will grade these excavation sites so that they will drain completely as flows recede and will not result in depressions or areas of ponding.

Monitoring and Reporting

Short-term Monitoring Period

Short-term monitoring will include periodic site inspections and annual monitoring surveys. Fish passage and fish stranding surveys during the short-term monitoring period will include the following:

- monitoring in channel structures to ensure that fish passage is not impeded by debris or other blockages;
- monitoring sediment management areas to ensure that they are self draining and do not pond water.

Performance Standards

The performance standards serve as a guide to determine whether mitigation measures are successfully meeting mitigation goals. Performance standards will apply to each mitigation site. There is no quantitative performance standard for fish passage, however, the District will monitor grade control structures, as well as general channel conditions to document that fish can access and use the upper watershed.

Sediment management areas will be monitored following storms that cause over bank flow to ensure that they are self draining and do not pond water.

Monitoring Schedule

Surveys to monitor potential obstructions to fish passage at each stabilization structure will occur up to 100 years. Surveys will occur after each storm to coincide with expected anadromous fish use of these areas during October 1 through April 30.

Surveys of sediment management areas will be monitored up to 100 years following storms that cause over bank flow to ensure that they are self draining and do not pond water. Surveys will occur within 24 hours after the flow has receded to the low-flow channel.

Photo Documentation

Photo documentation stations will be established during the final mitigation planning stages. Photographs will be taken a various locations:

- at each invert stabilization structure to show that it is not a barrier to anadromous fish; and

- at the sediment management areas to document that fish passage connections are open and water is not ponded in sediment excavation areas.

The photographs will be taken at the time of the annual vegetation monitoring surveys.

Monitoring Methods

Visual surveys to monitor fish passage at, and upstream of invert stabilization structures will occur annually up to 100 years. The survey times will coincide with expected anadromous fish use of these areas. If obstructions are noted during surveys, the District will remove the obstructions in a timely manner. This activity will be performed in accordance with the District's memorandum of understanding (MOU) with the California Department of Fish and Game (DFG).

Sediment management areas will be visually inspected to ensure that they free draining and do not pond water. If problems are noted during surveys, the District will re-contour the sediment basin or clear outlet obstructions in a timely manner. This activity will be performed in accordance with the District's memorandum of understanding (MOU) with the California Department of Fish and Game (DFG).

Reporting Schedule

A fish passage and fish stranding report will be prepared and submitted to the Corps, USFWS, DFG, NMFS, and other designated resource agencies by December 31 of each monitoring year.

Long-Term Monitoring Program

Long-term monitoring (i.e., years 6 through 100, or until mitigation goals are achieved) will include periodic site inspections and monitoring surveys to ensure adequate fish passage connections are maintained.

Performance Standards

Long-term performance standards have been developed for terrestrial and aquatic habitat types, with the exception of visual impact mitigation sites. The performance standards serve as a guide to determine whether mitigation habitats are successfully establishing and meeting mitigation goals. There is no quantitative performance standard for fish passage, however, the District will monitor grade control structures, as well as general channel conditions to document that fish can access and use the upper watershed.

Sediment management areas will be monitored following storms that cause over bank flow to ensure that they are self draining and do not pond water.

Monitoring Schedule

Surveys to monitor potential obstructions to fish passage within the project will occur up to 100 years. Surveys will occur after each storm to coincide with expected anadromous fish use of these areas during October 1 through April 30.

Surveys of sediment management areas will be monitored up to 100 years following storms that cause over bank flow to ensure that they are self draining

and do not pond water. Survey s will occur within 24 hours after the flow has receded to the low-flow channel.

Photo Documentation

Photo documentation stations will be established during the final mitigation planning stages. Photographs will be taken a various locations:

- at each invert stabilization structure to show that it is not a barrier to anadromous fish; and
- at the sediment management areas to document that fish passages ways are open and water is not ponded.

The photographs will be taken at the time of the annual vegetation monitoring surveys.

Monitoring Methods

Visual surveys to monitor fish passage at, and upstream of invert stabilization structures will occur annually up to 100 years. The survey times will coincide with expected anadromous fish use of these areas. If obstructions are noted during surveys, the District will remove the obstructions in a timely manner. This activity will be performed in accordance with the District's memorandum of understanding (MOU) with the California Department of Fish and Game (DFG).

Sediment management areas will be visually inspected to ensure that they free draining and do not pond water. If problems are noted during surveys, the District will re-contour the sediment basin or clear outlet obstructions in a timely manner. This activity will be performed in accordance with the District's memorandum of understanding (MOU) with the California Department of Fish and Game (DFG).

Reporting Schedule

A fish passage and fish stranding report will be prepared and submitted to the Corps, USFWS, DFG, NMFS, RWQCB, and other designated resource agencies by December 31 of each monitoring year.

Mitigation Measure LU-1: Install Safety Measures

To ensure the safety of the residents of the mobile home park located adjacent to the proposed levee extension in reach F, a safety rail or fence will be added to the top of the retaining wall in the vicinity of the mobile home park, and access to the retaining wall on the south levee will be restricted to ensure that residents or other recreation users of the levees cannot access this area during flood events.

Monitoring and Reporting

The District will include the specified safety features in the project design drawings and bid specifications. No reporting is necessary.

Mitigation Measure CR-1: Monitor all Excavation

Archaeological and Native American monitoring plans will be set forth in detail in the cultural resources PA for the project. The District will require that an archaeological monitor be present during the excavation on the west bank at the locations of SCL-762 and SCL-492 if backwalls are required at these locations. If excavation reveals archaeological material below the level of the levee base, project work in the vicinity will stop to provide the archaeologist an opportunity to inspect the materials and assess their integrity. If the deposits retain integrity, they will be assumed to be significant under NRHP/CRHR criterion D (potential to yield data), and a data recovery/mitigation plan will be developed in accordance with the terms of the cultural resources PA.

If human remains are uncovered during excavation or soils disturbance, work in the vicinity will stop, the remains will be protected, and the provisions of state law with respect to the county coroner (Pub. Res. Code sec. 5097.98) and Native American consultation will be applied. If the remains cannot be positively identified as human at the time of discovery, they will be left in place in the ground until an archaeologist can inspect them or other person qualified to identify human bone.

An archaeological monitor will be present during drilling for foundation construction if this activity will bring subsurface soils to the surface. If archaeological materials are evident in the drill spoils, drilling in the vicinity will be halted until additional assessment and mitigation can be established, consistent with the terms of the cultural resources PA. Pile driving typically does not bring subsurface material to the surface; therefore, archaeological monitoring will not be required for pile driving, even at sensitive locations. However, if a pile cap is excavated at the identified site location, an archaeologist, with work stoppage, will monitor this excavation and mitigation provisions as described above.

These mitigation measures will reduce impacts of the Project to a less-than-significant level because previously recorded sites will be protected and work will stop if human remains were found at excavation sites.

Monitoring and Reporting

The District will monitor construction activities in potentially sensitive arechaeological and historic resource areas. The District will notify the appropriate Native American community at least 60 days in advance of construction activities so that a Native American monitor can be arranged. If human remains or artifacts are found work shall stop and the appropriate agencies notified by the entity finding the remains or artifacts (District monitor, Native American monitor, or Contractor). The other responsible entities shall also be notified to ensure that they are all aware of the find.

Mitigation Measure CR-2: Avoid Vibrational Impacts on the Alviso Historic District

The District will avoid potential vibration impacts on Alviso Historic District structures in the vicinity of reach G by prohibiting use of pile drivers for foundation construction on the reach-G levees.

Monitoring and Reporting

The District shall specifically prohibit pile driving in or adjacent to the Alviso Historic District in the construction bid specifications. No reporting is required.

Mitigation Measure CR-3: Restrict Site Used for Staging Areas

The District will restrict use of staging areas 5 and 10 in areas where known cultural resources (sites CA-SCL-276 and CA-SCL-6W) are located, either by not using these sites as staging areas during LGRP construction or by using only portions of these sites that are outside the known boundaries for these resources. The District will require that cultural resources site boundaries be identified for the contractor before beginning construction.

Monitoring and Reporting

If possible the District will avoid using potential staging areas 5 and 10. If it is necessary to use these sites, the District will flag the boundaries of the resources and have a barrier fence erected. Prior to using these staging areas areas, the District will conduct a walk through inspection of the sites to ensure that barrier fencing is properly installed. The District will periodically inspect the site to ensure that the barrier fences are in place and equipment has not entered the areas. The District shall immediately notify the construction contractor if there is a non-compliance issue.

Mitigation Measure CR-4: Avoid Impacts on Sensitive Subsurface Archaeological Resources

The District will avoid impacts on sensitive subsurface archaeological resources, particularly near the SR 237 bridge construction area, by ensuring that no construction takes place in these sensitive areas before subsurface testing clearly indicates that no impacts on sensitive archaeological resources will result from project construction. The District will perform a cultural resources reconnaissance for the most sensitive resource areas to develop a testing strategy. A mechanical archaeological testing program will be performed. The goal of

testing will be to identify subsurface resources that could be affected by soil excavations below the invert of lower Guadalupe River levees. If resources are identified, additional hand or mechanical excavation will be performed to define resources boundaries, assess integrity, and evaluate significance. For historic resources, site-specific historic research could also be required. If resources are identified that appear to be eligible for the NRHP or CRHR, treatment plans will be developed and implemented to recover, avoid, or document the resource. This testing program will be developed in coordination with the Corps, Caltrans, the SHPO, and the District and will implemented in accordance with a cultural resources PA. If human remains are discovered, site work will stop immediately as indicated under Mitigation Measure CR-1.

Monitoring and Reporting

Prior to construction the District will conduct subsurface testing in areas where excavations will extend below the base of the existing levee system to ensure that potential archeological resources are not impacted. The District shall submit a report to the Corps, Caltrans, and SHPO at least 30 days prior to construction documenting the results of the subsurface investigations and other measures taken to protect archeological resources as specified in the cultural resources PA.

Adaptive Management

Adaptive management is defined as a decision-making process to optimize the long-term implementation of flood protection mitigation measures on the Lower Guadalupe River. One of the objectives of adaptive management is to ensure that ecological functions and habitat values affected by the Proposed Project and recommended mitigation measures are reestablished. Key components of adaptive management are identifying indicators for ecological functions and habitat values, monitoring the indicators, setting performance standards (numerical and descriptive goals) for the indicators, and planning and implementing remedial actions. The adaptive management process provides a mechanism by which remedial actions for riparian and wetland mitigation, fish passage measures and other resource monitoring efforts can be implemented if a performance standard is not achieved.

Figure 3-2 illustrates the adaptive management process, including selection of indicators and performance standards during the planning process, measurement of indicators as part of the monitoring phase, and assessment to determine achievement of mitigation objectives during the agency review phase. All three phases are ongoing until the mitigation objectives are achieved.

This MMP includes adaptive management as an integral component of the Project. Specific monitoring objectives and performance standards for each applicable measure were described previously. The MMP provides for an Adaptive Management Team (AMT). This Team, composed of representatives of the District, Corps, City of San Jose, Regional Board, FWS, NMFS, DFG,

Guadalupe-Coyote Resource Conservation District, will provide ongoing oversight of the MMP implementation. The AMT will amend the MMP, if necessary, on the basis of the monitoring results and through a consensus process subject to any necessary regulatory approvals. Fish population and environmental data collected by the FAHCE process will be used, as appropriate, by the AMT in the adaptive management of this MMP. The AMT will also take an integrated watershed approach, to the extent possible, for implementation of mitigation measures in manner that reflects the interconnectedness of flood protection and other projects on the Guadalupe River.

The purpose of the AMT is to assure that mitigation measures successfully reestablish ecological functions and habitat values and that other adaptive management processes are in place to ensure that environmental commitments and mitigation measures are adequately implemented. The AMT will review monitoring results to determine whether the performance standards established by the MMP have been achieved. If a performance standard is not achieved, the AMT will determine whether the standard is likely to be met. If the AMT decides that the performance standard is not likely to be met, then the AMT will determine whether the performance standard is appropriate, and, if the standard was determined to be inappropriate, identify another standard and monitoring objective. If the AMT determines that the performance standard is appropriate, the AMT will identify a remedial action to be implemented to ensure mitigation success. Monitoring will then continue until the performance standard is met.

The following describes the adaptive management process illustrated in Figure 3-2 and defines specific terms used in that figure.

- An indicator provides information about the condition of ecological functions and habitat affected by mitigation actions. For example, survival or percent cover could be an indicator for riparian vegetation installed as mitigation.
- Monitoring provides specific data or values for each indicator affected by mitigation actions.
- Performance standards are numerical and descriptive goals for each indicator.
- If a performance standard is not achieved, the AMT will determine whether the performance standard is likely to be met. This will be determined by AMT's analysis of measured values. If the AMT decides that the performance standard is not likely to be met, then the AMT will determine whether the indicator is appropriate and, if the indicator was determined to be inappropriate, identify another indicator and performance standard. If the AMT determines that the indicator is the correct one to be using, the AMT will then identify a remedial action to be implemented to ensure mitigation success. Monitoring will then continue until the performance standard is met.

Governance of Adaptive Management Program

The AMT will include each signatory of a Memorandum for Implementation of the LGRP. These AMT members may adopt criteria and procedures to add additional parties to the AMT. At a minimum, such criteria and procedures will require a finding that such party has committed to participate in the manner described in this governance program, and that such participation will materially contribute to the effectiveness and success of implementation of the LGRP adaptive management program.

Each member will designate a representative who has qualifications, authority, and availability to participate, necessary to assist the AMT in implementing the adaptive management program. Each representative will participate actively in the AMT's meetings and other work and may designate a proxy. Representatives will inform their senior managers of developments in the implementation of the adaptive management program.

The AMT will review annual monitoring reports. It will evaluate progress towards meeting performance standards in the MMP and the need to modify implementation of environmental commitments and adopted mitigation measures to achieve performance standards. It will make recommendations to designated District staff for such modifications, although it does not have the authority to require that the District adopt any such recommendations.

The AMT will meet as needed to implement the adaptive management program.

The AMT's decisions, including those making recommendations that the LGRP environmental commitments or mitigation measures be modified will be by consensus of the members participating in a noticed meeting. In the event concensus is not reached on a proposed decision, the representatives will systematically propose and consider alternatives that may resolve the dispute. The AMT may engage a facilitator to assist in this effort. A dispute does not modify the District's authority and duty to implement each environmental commitment and adopted mitigation measure specified in the MMP.

This governance document does not modify the authority, right, or duty of any member under applicable law.

Application of Adaptive Management Program

For the LGRP Proposed Project the following environmental commitments and mitigation measures would require application of an adaptive management process:

- Construction-Area Fish Management Program
- Mitigation Measure WQ-1: Develop and Implement a Mercury Monitoring Plan;

- Mitigation Measure V-1: Replace and Compensate for Loss of Riparian and Wetland Habitat; and
- Mitigation Measure F-1: Provide Fish Passage Connections

In addition, the District has agreed to monitoring and adaptive management procedures for sediment and vegetation management activities under its multi-year Stream Maintenance Program (SMP). The District has also agreed to monitor the LGRPs effects on the geomorphological processes in the lower Guadalupe River as part of a separate adaptive channel meander management program. The following is a discussion of the adaptive management procedures for each on these environmental commitments and mitigation measures.

Construction-Area Fish Management Adaptive Management

Adaptive management for this environmental commitment will involve adjustment, as needed, of the fish passage requirements at each in-channel construction site based on the District's ability to maintain adequate fish passage at LGRP in-channel construction sites. The appropriate fish passage criteria will be identified by the construction monitor to ensure that culverts and siphons are in place to maintain river flow past construction sites; ensure that flow is diverted incrementally and that any pumps are appropriately screened to meet NMFS requirements; avoid creation of fish barriers; and to monitor the presence of anadromous fish. Based on the construction site monitoring, construction-area fish management criteria may be adjusted at the grade control weir sites in reach A, invert stabilization sites at bridges and the SR 237 bridge replacement site to ensure that the maximum fish passage standards possible are met at these construction sites.

Mercury Monitoring Adaptive Management

Adaptive management for mitigation measure WQ-1 will involve decisions about whether to pursue a detailed evaluation of lower Guadalupe River mercury concentration impacts in salt ponds. Based on measured mercury concentrations in lower Guadalupe River flood flows, the District will measure whether flood water mercury concentrations exceed the TMDL objective concentration. Exceedance of the objective concentration will be used to determine the need for LGRP corrective actions to address salt pond mercury concentrations. Adaptive management procedures will be outlined in the mercury monitoring implementation plan. If lower Guadalupe River floodwater mercury concentrations do not exceed the TMDL objective concentrations no additional salt pond investigation will be pursued.

Riparian and Wetland Habitat Replacement Adaptive Management

Adaptive management for riparian and wetland vegetation mitigation sites will involve evaluation of the survival performance standard success. Failure to meet the survival performance standard within 3 years would result in AMT evaluation of the cause of failure and selection of appropriate remedial actions by the AMT. Remedial actions for riparian and wetland mitigation sites include, but are not necessarily limited to:

- replanting appropriate species or alternative species if evaluation indicates that planted species are not suitable for the site;
- replanting to maintain overall species diversity;
- replanting at an alternative site if evaluation indicates that site conditions will not support riparian and/or wetland vegetation;
- modification of the planting area irrigation or hydrologic regime
- treatment of disease, pest management, and soil treatment; and
- physical or chemical removal of competing nonnative species.

Fish Passage Connections Adaptive Management

Adaptive management for fish passage at grade control structures would involve monitoring performance of grade control weirs in reach A and the invert stabilization structures at bridges and potentially modifying them if they are creating barriers to anadromous fish passage. Similarly, fish passage connections from sediment management areas to the low-flow channel will be monitored during management activities to ensure grading of excavated areas and connections would not create ponding. Following flood flow conditions to sediment management areas and connections will be monitored to identify potential fish stranding conditions. If substantial ponding is identified, remedial actions will involve:

- evaluation of ponded areas for presence of fish species that would be captured and relocated to the low-flow channel;
- regrading of sediment management areas and fish passage connections to eliminate ponded areas; and
- coordination with USFWS, NMFS and DFG staff to ensure stranding conditions have been eliminated.

Potential remedial actions for fish passage and fish connection issues would be applied at the time of the maintenance activities or following infrequent flood flow conditions when sediment management areas would be inundated.

Sediment and Vegetation Management Adaptive Management

Sediment and vegetation management adaptive management procedures on the lower Guadalupe River would be dictated by the District's SMP agreements and channel maintenance requirements that are recommended in the LGRP Engineers Report.

Low-Flow Channel Meander Adaptive Management

As part of the District's Guadalupe Watershed Integration Group (GWIG) meetings with various resource agencies and the GCRCD, a commitment has been made to evaluate the future geomorphological processes on the lower Guadalupe River once the LGRP Proposed Project and adopted mitigation measures are implemented. The purpose of this geomorphological investigation will be to monitor lower Guadalupe River low-flow channel conditions and identify areas where the channel may be attempting to migrate or meander within the larger flood conveyance channel. Based on the findings of this investigation, and particularly if the low-flow channel appears to be moving substantially or creating adverse channel conditions, the District could decide to alter its channel management or implement adaptive management solutions to correct problems that have been identified.

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Chapter 5
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Table 3-2. Performance Standards and Indicators for Mitigation Measures and Commitments

Mitigation Measures and Commitment	Performance Standards	Indicators
WQ-1 Develop and Implement a Mercury Monitoring Plan	No specific performance standards have been identified. The purpose of the plan is to assist in determining if a performance standard is needed.	Flow and flood flow mercury concentrations.
HH-3 Pump Cargill Salt Ponds	Pump ponds A8D and A6 dry following a design flood event prior to the western snowy plover season	Water in ponds A8D and A6
V-1 Replace or Compensate for Loss of Riparian and Wetland Habitat	Short-term- For riparian forest and SRA habitat 50% survival of each type of original plan material by year 5.	Short-term- 50% Percent survival by year 5.
	Long-term- For riparian forest and SRA habitat 30% canopy cover by the end of the 10th year and 80% canopy cover by the end of year 40.	Long-term- Percent canopy cover and cover type.
F-1 Provide Fish-Passage Connection	Short-term- Surveys after each storm to coincide with expected anadromous fish use to monitor potential obstructions to fish passage at each stabilization structure and ensure that debris or other blockages do not impede fish passage. Surveys of sediment management areas following storms that cause over bank flow to ensure that they are self draining and do not pond water.	Short and long-term- grade control structures and channel conditions.
	Long-term- Same as short-term	
Mitigation Measure W-1 Avoid Nesting Raptors and Birds During Construction and Maintenance	No impacts to nesting birds within or immediately adjacent to project area	Presence of active nest
Construction-Area Fish Management Program	Adequate fish passage conditions would be maintained	Water velocities should not exceed 8fps.
		Water depth should be at least 1 foot.

Table 3-1. Mitigation and Monitoring Plan Summary

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Hydrologic and Hydraulic Conditions							
Potential for Flooding Induced by the LGRP	Reduce contribution of Guadalupe River to flooding problems in Alviso and minimize effects on Cargill Salt operations	None	HH-1: Construct West-Perimeter Levee Around Alviso	East bank of Alviso Slough from UPRR to northeast corner of the marina	NA	Before operation of the Corps' Guadalupe River Project	District
			HH-2: Construct Alviso Slough Overflow Weir and Harden Pond A6 Levee	Immediately across from Alviso in natural low spot in Cargill levee	NA	Before operation of the Corps' Guadalupe River Project	District
			HH-3: Pump Cargill Salt Ponds	Cargill Salt Ponds A5, A7, A8D, and A8W	Operate, maintain, and report in accordance with O&M plan	As needed following flooding in Cargill ponds	District
			HH-4: Manage Vegetation in Alviso Slough from UPRR Downstream to Overflow Weir	East bank of Alviso Slough from UPRR to opposite the overflow weir	Operate, maintain, and report in accordance with O&M plan	Ongoing maintenance activity to allow proper channel function during flood events and ensure function of overflow weir	District
Geomorphology and Geologic Hazards							
No Significant Impacts Identified	NA	NA	NA	NA	NA	NA	NA
Water Quality							
Potential Release of Sediment or Sediment-Borne Pollutants during Construction	Minimize potential for releases of pollutants to the river by limiting construction to low-flow periods, implementing standard good house-keeping measures, removing mercury-laden soil from the watershed for disposal, and complying with regulatory requirements	Stormwater pollution prevention plan	No additional measures identified	Construction area	Monitor and report to RWQCB per permit requirements - copy District	District will monitor before construction to ensure that the SWPPP has been included in construction plans as per Bid Specifications. Must be submitted to the RWQCB before construction and must be posted on-site	District/ Contractor

Table 3-1. Continued

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Water Quality (continued)							
		Erosion and sediment control plan		Construction area	NA	District will monitor before construction to ensure that the erosion and sediment control plan has been included in construction plans as per Bid Specifications	District
		Spill prevention and response plan		Construction area	Immediately report occurrences to RWQCB, DFG, and District	District will monitor before construction to ensure that the spill prevention and response plan has been included in construction plans as per Bid Specifications	District
		Soil management plan		Construction area	Report to RWQCB	District will monitor before construction to ensure that the soil management plan has been included in construction plans as per Bid Specifications	District
		Hazardous and toxic materials contingency plan		Construction area	Immediately report occurrences to RWQCB and District	District will monitor before construction to ensure that hazardous and toxic materials contingency plan has been included in construction plans as per Bid Specifications	District
		Construction period limits		Construction area	NA	In-channel construction would be limited to the summer low-precipitation period (April 15–October 15). Construction period limits will be specified in Bid Specifications	District

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Water Quality (continued)							
Potential for Accidental Spills of Construction Materials	Minimize potential for accidental spills by implementing standard BMPs and complying with regulatory requirements	Stormwater pollution prevention plan	No additional measures identified	Construction area	Monitor and report to RWQCB per permit requirements - copy District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications. Must be submitted to the RWQCB before construction and must be posted on-site	District/ Contractor
		Spill prevention and response plan		Construction area	Immediately report occurrences to RWQCB, DFG, and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
Potential Degradation of Water Quality as a Result of Vegetation and Sediment Management	Minimize potential for releases of pollutants to the river by limiting construction to low-flow periods, implementing standard good housekeeping measures, removing mercury-laden soil from the watershed for disposal, and complying with regulatory requirements	Stormwater pollution prevention plan	No additional measures identified	Construction area	Monitor and report to RWQCB per permit requirements - copy District	District will monitor before construction to ensure that the SWPPP has been included in construction plans as per Bid Specifications. Must be submitted to the RWQCB before construction and must be posted on-site	District/ Contractor
		Spill prevention and response plan		Construction area	Immediately report occurrences to RWQCB, DFG, and District	District will monitor before construction to ensure that the erosion and sediment control plan has been included in construction plans as per Bid Specifications	District

Table 3-1. Continued

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Water Quality (continued)							
		Soil management plan		Construction area	Report to RWQCB	District will monitor before construction to ensure that the spill prevention and response plan has been included in construction plans as per Bid Specifications	District
		Hazardous and toxic materials contingency plan		Construction area	Immediately report occurrences to RWQCB and District	District will monitor before construction to ensure that the hazardous materials and toxic contingency plan has been included in construction plans as per Bid Specifications	District
		Construction period limits		Construction area	Monitor and report in accordance with O&M plan		District
Potential Discharge or Mobilization of Mercury	Minimize potential for releases of pollutants to the river by limiting construction to low-flow periods, implementing standard BMPs, and removing mercury-laden soil from the watershed for disposal	Erosion and sediment control plan	No additional measures identified	Construction area	NA	District will monitor before construction to ensure that hazardous and toxic materials contingency plan has been included in construction plans as per Bid Specifications	District
		Soil management plan		Construction area	Report to RWQCB	In-channel construction would be limited to the summer low-precipitation period (April 15–October 15) construction period limits will be specified in Bid Specifications	District

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Water Quality (continued)							
	Minimize the potential for methyl mercury formation by removing contaminated materials as necessary	Soil management plan	No additional measures identified.	Cargill salt Ponds A5, A7, A8D, and A8W	Report to RWQCB	During construction of pond A8W overflow weir	District
Hazards and Hazardous Materials							
Construction Activities Affected by Exposure to Contaminated Soils		Hazardous and toxic materials contingency plan	No additional measures identified	Construction area	Immediately report occurrences to RWQCB and District	District will monitor before construction to ensure that a hazardous and toxic materials contingency plan have been included in construction plans as per Bid Specifications	District
		Soil management plan		Construction area	Report to RWQCB	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
Construction Activities Affected by Contaminated Groundwater		Soil management plan	No additional measures identified	Construction area	Report to RWQCB	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District

Table 3-1. Continued

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Vegetation							
Potential for Loss of Riparian (4.65 ac.), Wetland (48.98 ac.), and Ruderal (83.15 ac.) Vegetation from Construction and Vegetation and Sediment Management	Minimize habitat disturbance through project design and vegetation protection plan. Mitigate riparian impacts through on-site plantings and undesirable-species replacement. Mitigate tidal wetlands with in-kind replacement in Districts salt pond A4 restoration site. Mitigate nontidal wetlands impacts with out-of-kind replacement in District's salt pond site. Ruderal impacts, although not significant, will be minimized by implementing erosion and sediment control plan	Vegetation protection plan	V-1: Replace or Compensate for Riparian and Wetland Habitat		NA	Riparian vegetation will be planted in reach A no later than end of 2003. Wetland mitigation will in Pond A4 in 2007	District
		Erosion and sediment control plan	Riparian: in-kind at 0.5:1 ratio	Reach A	Monitor riparian plantings for survival and density for 5 years, replace as needed to maintain 75% survival per year and at least 50% cover by the end of the monitoring period. Annual monitoring report to USFWS, NMFS, and DFG	2003	
			Wetland-tidal freshwater marsh: in kind @ 1:1 ratio	District's Pond A4	Fund prorated (±10%) share of monitoring costs specified for restoration project. Annual monitoring report to USFWS, NMFS, Corps, and DFG	2007	

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Vegetation (continued)							
			Wetland - freshwater marsh: out-of-kind @ 2:1 ratio	District's Pond A4	Fund prorated share of restoration project monitoring costs. Annual monitoring report to USFWS, NMFS, Corps, and DFG	2007	
Potential for Impacts on Tidal Salt Marsh, Diked Salt Marsh, Brackish Marsh, and Freshwater Marsh from Implementing the Baylands Mitigation Measure	Minimize impacts on habitat by restoring marsh habitat in pond A4		V-2: Replace or compensate for riparian wetland habitat. Additional mitigation will be provided to include wetland impacts from Baylands Mitigation Measure	District's Pond A4	Annual monitoring report to USFWS, NMFS, Corps, and DFG	2007	District
Wildlife							
Potential for Adverse Effects on Common Wildlife Species Associated with Riparian, Wetland, and Upland Habitat Loss	Minimize impacts on wildlife by replacing habitats and limiting disturbance through critical life stages by limiting construction and maintenance periods	Construction period limits	V-1: Replace or Compensate for Riparian and Wetland Habitat	Project site and District's Pond A4	Annual monitoring report to USFWS, NMFS, Corps, and DFG	Riparian and wetland habitat will be replaced by end of 2003 and 2007, respectively	District
			W-1: Avoid Nesting Raptors and Birds During Construction and Maintenance	Construction and vegetation and sediment management	NA	Before construction	District

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Wildlife (Continued)							
Potential for Impacts on Western Snowy Plover	Avoid loss of breeding season in pond A8D	None	HH-3: Pump Cargill Salt Ponds	Pond A8D	Monitoring report to USFWS and DFG following flooding event	Following storms that flood pond A8D and coordinated with downtown Guadalupe River requirement to pump Pond A8D	District
Potential for Impacts on Nesting Raptors, including Burrowing Owls	Avoid construction impacts on nesting burrowing owls	None	W-1: Avoid Nesting Raptors and Birds During Construction and Maintenance		Monitoring report sent to DFG before construction begins	Before construction begins on overflow weir and Alviso levee	District
Fisheries							
Potential for Changes in Fish Habitat from the Construction of Floodwalls, Levees, and Other Structures	Minimize impacts on fisheries by preventing degradation of water quality	Stormwater pollution prevention plan	No additional measures identified	Construction area	Monitor and report to RWQCB per permit requirements - copy District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District/ Contractor
		Erosion and sediment control plan		Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Fisheries (Continued)							
		Spill prevention and response plan		Construction area	Immediately report occurrences to RWQCB, DFG, and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Hazardous and toxic materials contingency plan		Construction area	Immediately report occurrences to RWQCB and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Construction period limits		Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
Potential for Changes in Fish Habitat from the Construction of a New SR 237 Bridge	Minimize impacts on fisheries by preventing degradation of water quality	Stormwater pollution prevention plan	No additional measures identified	Construction area	Monitor and report to RWQCB per permit requirements - copy District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District/ Contractor

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Fisheries (Continued)							
		Erosion and sediment control plan		Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Spill prevention and response plan		Construction area	Immediately report occurrences to RWQCB, DFG, and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Hazardous and toxic materials contingency plan		Construction area	Immediately report occurrences to RWQCB and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Construction area fish management program		Construction areas in or adjacent to low-flow channel	Monitor fisheries impacts and report findings to NMFS, USFWS, and DFG	District and contractor will monitor drawing construction in or near the low-flow channel	District/ Contractor

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Fisheries (Continued)							
		Construction period limits		Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
Potential for Changes in Fish Habitat and Anadromous Fish Migration from the Construction and Operation of the SR 237 Bypass Option	Minimize impacts on fisheries by preventing degradation of water quality	Stormwater pollution prevention plan	No additional measures identified	Construction area	Monitor and report to RWQCB per permit requirements - copy District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District/ Contractor
		Erosion and sediment control plan		Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Spill prevention and response plan		Construction area	Immediately report occurrences to RWQCB, DFG, and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District

Table 3-1. Continued

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Fisheries (Continued)							
		Hazardous and toxic materials contingency plan		Construction area	Immediately report occurrences to RWQCB and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Construction period limits		Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Construction area fish management program		Construction areas in or adjacent to low-flow channel	Monitor fisheries impacts and report findings to NMFS, USFWS, and DFG	District and contractor will monitor drawing construction in or near the low-flow channel	District/ Contractor
Potential for Changes in Fish Habitat and Anadromous Fish Migration from Vegetation and Sediment Management Activities in Reaches A–G	Minimize impacts on fisheries by preventing degradation of water quality and providing connections from dredged areas to main channel		F-1: Provide Fish Passage Connection to Low-Flow Channel	Sediment management areas	Annual monitoring report to USFWS, NMFS, and DFG describing corrective actions taken if needed	During project design and annually as needed to maintain connection to low-flow channel	District
		Stormwater pollution prevention plan		Sediment management areas	Monitor and report to RWQCB per permit requirements - copy District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District/ Contractor

Table 3-1. Continued

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Fisheries (Continued)							
		Erosion and sediment control plan		Sediment management areas	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Spill prevention and response plan		Sediment management areas	Immediately report occurrences to RWQCB, DFG, and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Hazardous and toxic materials contingency plan		Sediment management areas	Immediately report occurrences to RWQCB and District	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District
		Construction period limits		Sediment management areas	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Land Use and Planning							
Potential for Construction-Related Nuisances from Raising the SR 237 Bridge	Minimize construction nuisances by controlling dust and noise. Minimize traffic nuisances by installing signs and limiting project activities to nonpeak traffic hours	Bay Area Air Quality Management District (BAAQMD) feasible control measures for emissions of respirable particulate matter smaller than 10 microns (PM10)	No additional measures identified	Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	Contractor
		Traffic safety plan		Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	Contractor
		Noise-reducing construction practices		Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	Contractor
Potential for Land Use Conflicts from Construction of SR 237 Bypass Culvert Option	Minimize safety hazards by installing guard rails and signs	None	LU-1: Install Safety Measures	SR 237	NA	Incorporate into project design	District

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Recreation, Public Access, and Visual Resources							
Potential for Changes in Visual Resources and Views from Flood-Control Structures	Soften look of channel modification structures	None	RV-1: Plant vegetation after construction	Reaches D-G	None	Incorporate into project design	District
Transportation and Traffic							
Potential for Roadway Safety Hazards	Minimize traffic safety hazards by installing signs and limiting project- related traffic to nonpeak traffic hours	Traffic safety plan	No additional measures identified	Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	Contractor
Increased Delay for Traffic Traveling Across the SR 237 Bridge	Minimize traffic delays by installing signs and limiting project activities to nonpeak traffic hours	Traffic safety plan	No mitigation available to reduce to less-than-significant level	Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	Contractor
Air Quality							
	Minimize air quality impacts by controlling dust and ensuring equipment is in proper state of repair	BAAQMD feasible control measures for emissions of respirable particulate matter smaller than 10 microns (PM10)	No additional measures identified	Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	Contractor

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Noise							
	Minimize noise impacts by ensuring equipment has proper mufflers and is in proper state of repair; designate a noise abatement coordinator to respond to local complaints	Noise-reducing construction practices	No additional measures identified	Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	District/ Contractor
Public Services and Utilities							
	Minimize potential for interruption of service by coordinating with utilities in the construction corridor	Service provider coordination before construction	No additional measures identified	Construction area	NA	District will monitor before construction to ensure that all environmental commitments and mitigation measures have been included in construction plans as per Bid Specifications	Contractor
Cultural Resources							
Potential for disturbance of recorded and undiscovered cultural resources in reaches A–G.	Minimize potential for impacts on cultural resources by monitoring construction activity, stopping work if potential resources are encountered, and appropriate treatment of encountered resources	Cultural resources, input avoidance measures		Excavated areas in construction area	Immediately stop work and report occurrences to County Coroner and District	Before and during LGRP excavations	District/ Contractor
			CR-1: Monitor all excavated areas		Monitor on-site during excavations report to District, Corps, and SHPO as per cultural resources PA	Before and during LGRP excavations	District

Impact	Mitigation Objective	Environmental Commitments	Mitigation Measures	Location	Mitigation Monitoring and Reporting Requirements	When Mitigation will be Implemented	Responsible Entity
Cultural Resources (Continued)							
			CR-2: Avoid vibrational impacts on Alviso historic district by restricting use of pile drivers near historic structures		Monitor on-site during excavations report to District, Corps, and SHPO as per cultural resources PA	During construction	District
			CR-3: Restrict use of staging areas 5 and 10 to avoid known sites		Monitor on-site during excavations report to District, Corps, and SHPO as per cultural resources PA	During construction	District
			CR-4: Avoid impacts on CA-SCL-5		Monitor on-site during excavations report to District, Corps, and SHPO as per cultural resources PA	Before and during construction	District

CORPS 404 PERMIT

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
333 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94105-2197

APR 28 2003

Regulatory Branch

SUBJECT: File Number 24897S

Mr. Dennis Cheong
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, California 95118-3614

Dear Cheong:

Enclosed is your signed copy of a Department of the Army permit (Enclosure 1) to construct the Lower Guadalupe River Flood Protection Project (LGRP) along the lower 10.5 kilometers of the Guadalupe River in the cities of San Jose and Santa Clara in Santa Clara County, California.

Please complete the appropriate parts of "Notice to Permittee" form (Enclosure 2), and return it to this office. You are responsible for ensuring that the contractor and workers executing the activity authorized herein are knowledgeable with the terms and conditions of this authorization.

Should you have any questions regarding this matter, please call Bob Smith of our Regulatory Branch at 415-977-8450. Please address all correspondence to the Regulatory Branch and refer to the file number at the head of this letter.

Sincerely,

Michael McCormick
Lieutenant Colonel, U.S. Army
District Engineer

Enclosures

Copy Furnished (w/encl 1 only):

US EPA, San Francisco, CA
US FWS, Sacramento, CA
US NMFS, Santa Rosa, CA
CA RWQCB, Oakland, CA
CA DFG, Yountville, CA
CA BCDC, San Francisco, CA

NOTICE TO PERMITTEE

Please use the forms below to report the dates when you start and finish the work authorized by the enclosed permit. Also if you suspend work for an extended period of time, use the forms below to report the dates you suspended and resumed work. The second copy is for your records. If you find that you cannot complete the work within the time granted by the permit, please apply for a time extension at least one month before your permit expires. If you materially change the plan or scope of the work, it will be necessary for you to submit new drawings and a request for a modification of your permit.
(cut out as needed) ----------

Date:_____

NOTICE OF COMPLETION OF WORK under Department of the Army permit No.24897S
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated April 24, 2003 to construct the LGRP on the Guadalupe River this is to notify you that the work was completed on _____.

Permittee: Santa Clara Valley Water District
Address: 5750 Almaden Expressway San Jose, CA 95118-3614

Date:_____

NOTICE OF RESUMPTION OF WORK under Department of the Army permit No. 24897S
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated April 24, 2003 to construct the LGRP on the Guadalupe River this is to notify you that work was resumed on _____.

Permittee: Santa Clara Valley Water District
Address: 5750 Almaden Expressway San Jose, CA 95118-3614

Date:_____

NOTICE OF SUSPENSION OF WORK under Department of the Army permit No. 24897S
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated April 24, 2003 to construct the LGRP on the Guadalupe River this is to notify you that work was suspended on _____.

Permittee: Santa Clara Valley Water District
Address: 5750 Almaden Expressway San Jose, CA 95118-3614

Date:_____

NOTICE OF COMMENCEMENT OF WORK under Department of the Army permit No. 24897S
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated April 24, 2003 to construct the LGRP on the Guadalupe River this is to notify you that work was commenced on _____.

Permittee: Santa Clara Valley Water District
Address: 5750 Almaden Expressway San Jose, CA 95118-3614

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
333 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94105-2197

APR 25 2003

Regulatory Branch

SUBJECT: File Number 24897S

Mr. Dennis Cheong
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, California 95118-3614

Dear Mr. Cheong:

Enclosed are two copies of a Department of the Army (DA) permit to construct the Lower Guadalupe River Flood Protection Project (LGRP) along the lower 10.5 kilometers of the Guadalupe River in the cities of San Jose and Santa Clara in Santa Clara County, California.

You are advised that the Corps has established an Administrative Appeal Process, as described in our regulations at 33 CFR Part 331 (65 FR 16486; March 28, 2000) and outlined in the enclosed flowchart and Notification of Administrative Appeal Options, Process, and Request for Appeal (NAO-RFA) Form. The following two options are available to you in your evaluation of the enclosed permit:

1) You may sign and date both copies of the permit on the line designated for "Permittee". Your signature on the permit indicates that you accept the permit in its entirety, and waive all rights to appeal the permit, or its terms and conditions. Both copies of the permit must be returned to this office for final authorization. We will then forward one copy of the fully executed permit for your records, at which time you will be authorized to commence work.

2) You may decline to sign the permit because you object to certain terms and conditions therein, and you may request that the permit be modified accordingly. You must outline your objections to the terms and conditions of the permit by completing Section II of the NAO-RFA Form. Your objections must be received by the District Engineer within sixty (60) days of the date of this letter, or you will forfeit your right to request changes to the terms and conditions of the permit. Upon receipt of the completed NAO-RFA Form, the District Engineer will evaluate your objections, and may: (a) modify the permit to address all of your objections, (b) modify the permit to address some of your objections, or (c) not modify the permit, having determined that the permit should be issued as previously written. In any of these three cases, the District Engineer will send you a final permit for your reconsideration, as well as a second NAO-RFA Form. Should you decline the final proffered permit, you can appeal the declined permit by submitting the completed NAO-RFA Form to the Division Engineer. The Division Engineer must receive the NAO-RFA

RECEIVED

2003 APR 30 PM 1:55

SF DISTRICT
CORPS OF ENGINEERS
REGULATORY BRANCH

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Santa Clara Valley Water District	File Number: 24897S	Date: 1 May 03
Attached is:		See Section below
X	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

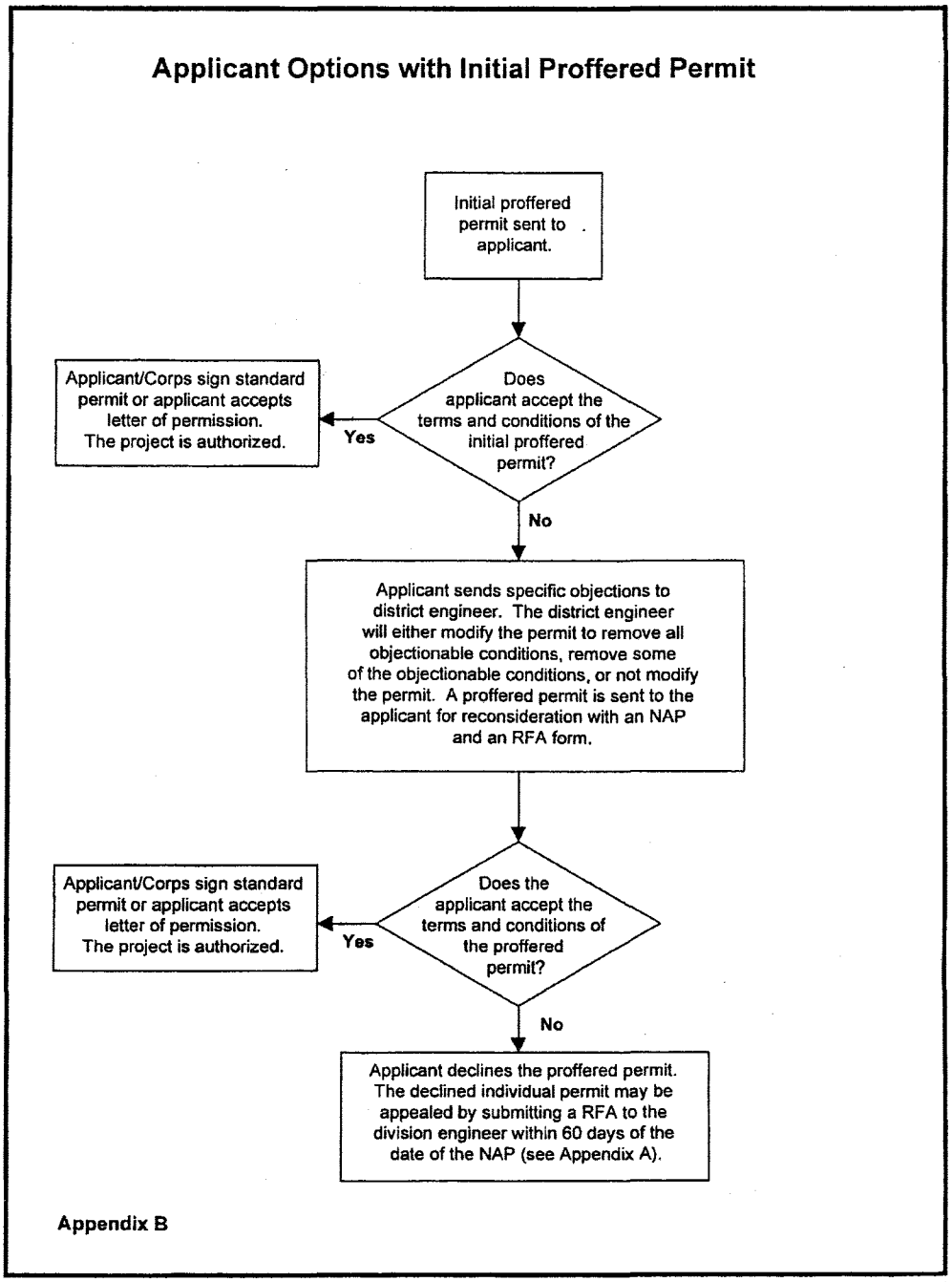
POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Edward A. Wylie, South Section, Regulatory Branch U.S. Army Corps of Engineers, San Francisco District 333 Market Street, San Francisco, CA 94105-2197 Tel. : (415) 977-8464 Fax: (415) 977-8343	If you only have questions regarding the appeal process you may also contact: Douglas R. Pomeroy, Appeal Review Officer U.S. Army Corps of Engineers, South Pacific Division 333 Market Street, San Francisco, CA 94105-2195 Tel.: (415) 977-8035 Fax: (415) 977-8047

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

Appendix B to Part 331—Applicant Options With Initial Proffered Permit


Applicant Options with Initial Proffered Permit
Initial proffered permit sent to applicant.
Does applicant accept the terms and conditions of the initial proffered permit?
Yes
Applicant/Corps sign standard permit or applicant accepts letter of permission. The project is authorized.
No
Applicant sends specific objections to district engineer. The district engineer will either modify the permit to remove all objectionable conditions, remove some of the objectionable conditions, or not modify the permit. A proffered permit is sent to the applicant for reconsideration with an NAP and an RFA form.
Does the applicant accept the terms and conditions of the proffered permit?
Yes
Applicant/Corps sign standard permit or applicant accepts letter of permission. The project is authorized.
No
Applicant declines the proffered permit. The declined individual permit may be appealed by submitting a RFA to the division engineer within 60 days of the date of the NAP (see Appendix A).
Appendix B

Form within sixty (60) days of the date of the second transmittal letter, or you will forfeit your right to pursue an appeal.

If you fail to sign and return both copies of this permit or fail to request a modification of the permit within sixty (60) days from the date of this letter, your permit application may be withdrawn pursuant to our regulations at 33 CFR Part 325.2(d)(5).

Should you have any questions regarding this matter, please call Bob Smith of our Regulatory Branch at 415-977-8450. Please address all correspondence to the Regulatory Branch and refer to the file number at the head of this letter.

Sincerely,

Michael McCormick
Lieutenant Colonel, Corps of Engineers
District Engineer

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permittee: **Santa Clara Valley Water District**

Permit No.: **24897S**

Issuing Office: **San Francisco District**

NOTE. The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

You are authorized to discharge fill in 14.23 acres of wetlands and waters of the US in accordance with attached table S-1, to construct the Lower Guadalupe River Flood Protection Project. All work shall be carried out in accordance with the attached plans and drawing labeled: "Lower Guadalupe River Flood Protection Project", in 31 sheets, prepared by CH2MHill, dated 06/06/02.

Project Location:

The project site is located along the Guadalupe River in the Cities of San Jose and Santa Clara, in Santa Clara County, California.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **May 1, 2008**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The permittee shall comply with the terms and conditions of the Biological Opinionon issued on April 17, 2003 by the National Marine Fisheries Service pursuant to Section 7 of the Endangered Species Act, and the included Essential Fish Habitat (EFH) Conservation recommendations. A copy of the opinion and EFH recommendations are attached.

2. No work authorized by this permit shall occur in San Francisco Bay Conservation and Development Comission (BCDC) jurisdiction until such time as a BCDC permit has been issued.

3. Mitigation shall be carried out in accordance with the "Lower Guadalupe River Flood Protection Project Mitigation and Monitoring Plan" prepared by Santa Clara Valley Water District, dated August 7, 2002 and subsequent Corps approved revisions.

(continued on page 4)

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Stanley M Wilcomin — April 28, 2003

(Permittee) (Date)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

28 April 03

(District Engineer) **Michael McCormick**
LTC, EN (Date)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(Transferee) (Date)

Special Conditions (Continued):

4. The permittee shall comply with the " PROGRAMMATIC AGREEMENT AMONG THE U.S. ARMY CORPS OF ENGINEERS, THE SANTA CLARA VALLEY WATER DISTRICT,THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER, ANDTHE ADVISORY COUNCIL ON HISTORIC PRESERVATION, REGARDING THE ISSUANCE OF A PERMIT UNDER THE AUTHORITY OF SECTION 404 OF THE CLEAN WATER ACT FOR THE SANTA CLARA VALLEY WATER DISTRICT LOWER GUADALUPE RIVER FLOOD CONTROL PROJECT" and subsequent approved revisions.

RECEIVED
2007 APR 30 PM 1:55
SF DISTRICT
CORPS OF ENGINEERS

Table S-1. Summary of Jurisdictional Areas Affected by the Lower Guadalupe River Flood Protection Project

		Permanent		Temporary	
Reach	Construction Activity	Wetland	Other Waters	Wetland	Other Waters
A	Bridge scour protection[1]	0.00	0.00	0.07	0.64
	Maintenance roads	0.15	0.34		
	Grade control weirs[2]	0.00	0.00		
B	Bridge scour protection[1]	0.00	0.00	0.10	0.33
	Levee improvement	0.02	0.01		
	Maintenance roads	0.04	0.05		
	Storm drain	0.01	0.01		
C	Bridge scour protection[1]	0.00	0.00	0.06	0.32
	Levee improvement	0.18	0.00		
	Maintenance roads	0.02	0.00		
	Storm drain	0.00	0.01		
D	Bridge scour protection[1]	0.00	0.00	0.01	0.17
E	Maintenance roads	0.03	0.00		0.01
F	Bridge replacement[1]	0.00	0.00	0.19	
	Levee improvement	0.23	0.03		
	Maintenance roads	0.15	0.00		
G	Bridge replacement[1]	0.00	0.00	0.19	
	Levee improvement	0.10	0.02		
	Maintenance roads	1.54	0.00		
Baylands	Alviso Slough overflow weir	0.13	0.00	2.89	5.28[3]
	Armoring of A6	0.00	0.00		0.60[3]
	Maintenance Roads	0.30	0.00		
	TOTAL Acres	**2.90**	**0.47**	**3.51**	**7.35**
	Hectares	**1.17**	**0.19**	**1.42**	**2.97**

[1] Project effects resulting from activities associated with bridge scour protection and bridge replacement will result in only a temporary effect on wetland resources. After construction, the OHWM will remain at pre-construction contours.

2 Placement of grade control weirs should not result in permanent loss of acreage of waters.

[3] Armoring of levees in salt ponds are considered temporary impacts to other waters and should not result in permanent loss of waters.

Table S-2. Summary of Impacts and Mitigation of LGRP and Baylands of Corps Jurisdictional Areas

Component	Habitat Type	Permanent (acres)	Temporary (acres)[1]	Mitigation for Permanent Impacts (acres)[2]	Mitigation for Temporary Impacts (acres)[3]	Total Mitigation for Component and Habitat Type
LGRP	Nontidal Freshwater Wetland	0.42	0.23	0.96	0.46[4]	1.42
	Tidal Freshwater Wetland	2.05	0.39	4.10	0.39	4.49
	Others Waters/Open Water	0.47	1.47	1.02	1.47	2.49
Baylands	Tidal Freshwater Wetland	0.43	2.89	0.86	2.89	3.75
	Others Waters/Open Water	0	5.88[5]	0	0	0
Total		3.37	10.86	6.94	5.21	12.15

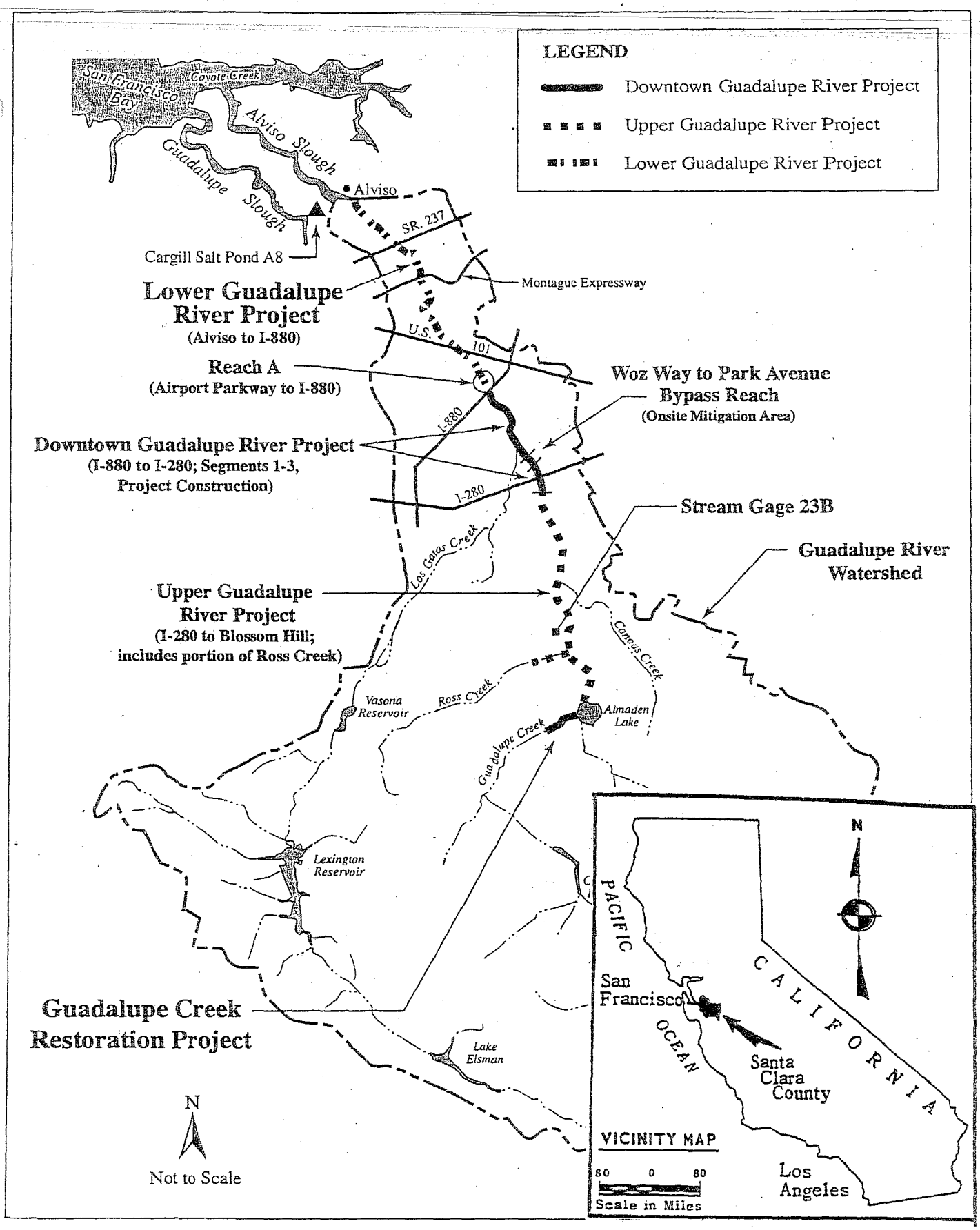
1 Temporary impacts to be mitigated under LGRP include impacts from bridge scour protection, bridge replacement, and temporary disturbance resulting from construction.

2 Permanent impacts will be mitigated at 2:1 for aquatic resources and 3:1 for riparian.

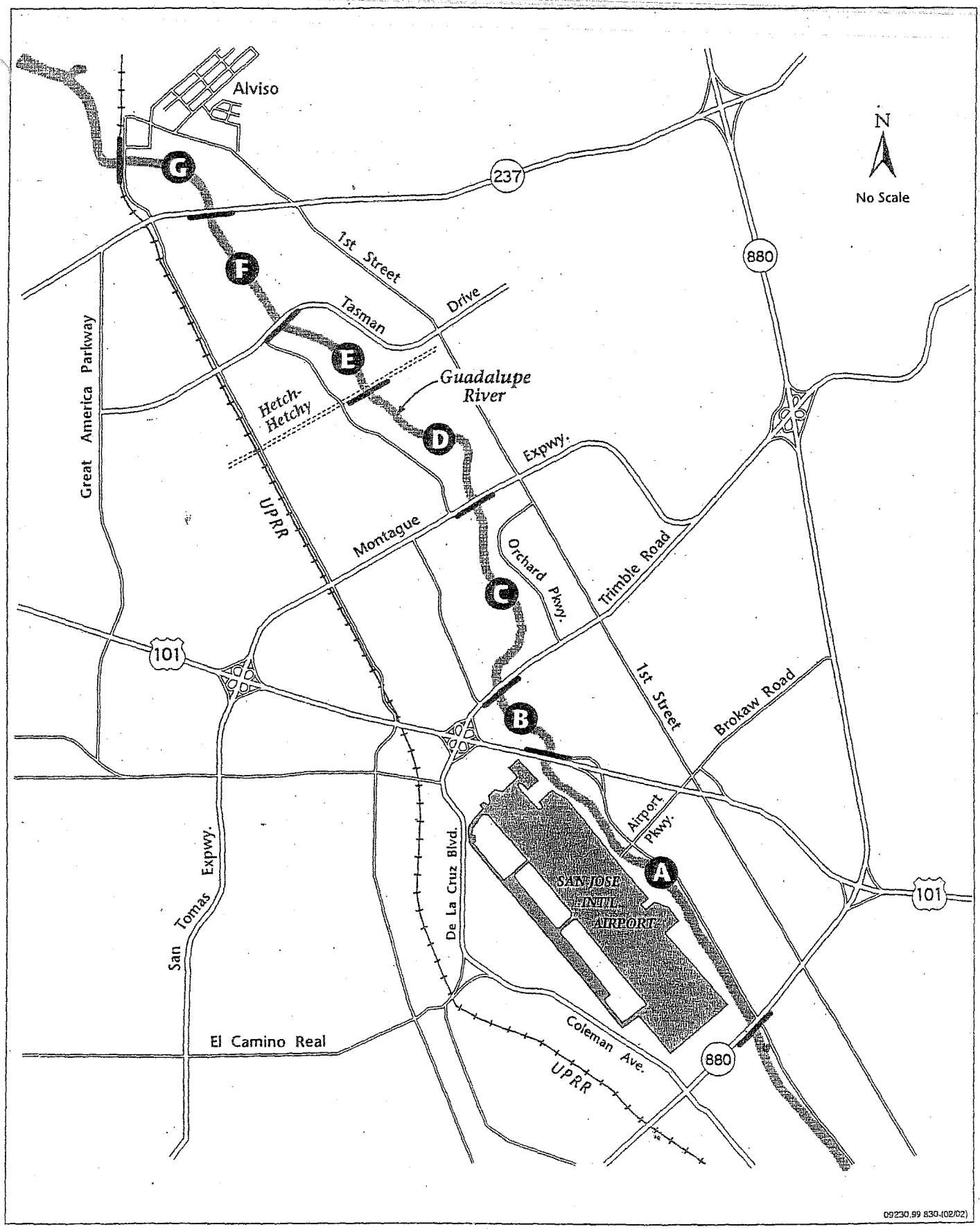
3 Temporary impacts will be mitigated at 1:1.

4 Mitigation for temporary impacts on nontidal freshwater wetlands will be mitigated at 2:1 to compensate for out-of-kind replacement.

5 No mitigation is proposed for temporary impacts resulting to salt ponds as part of levee armoring.

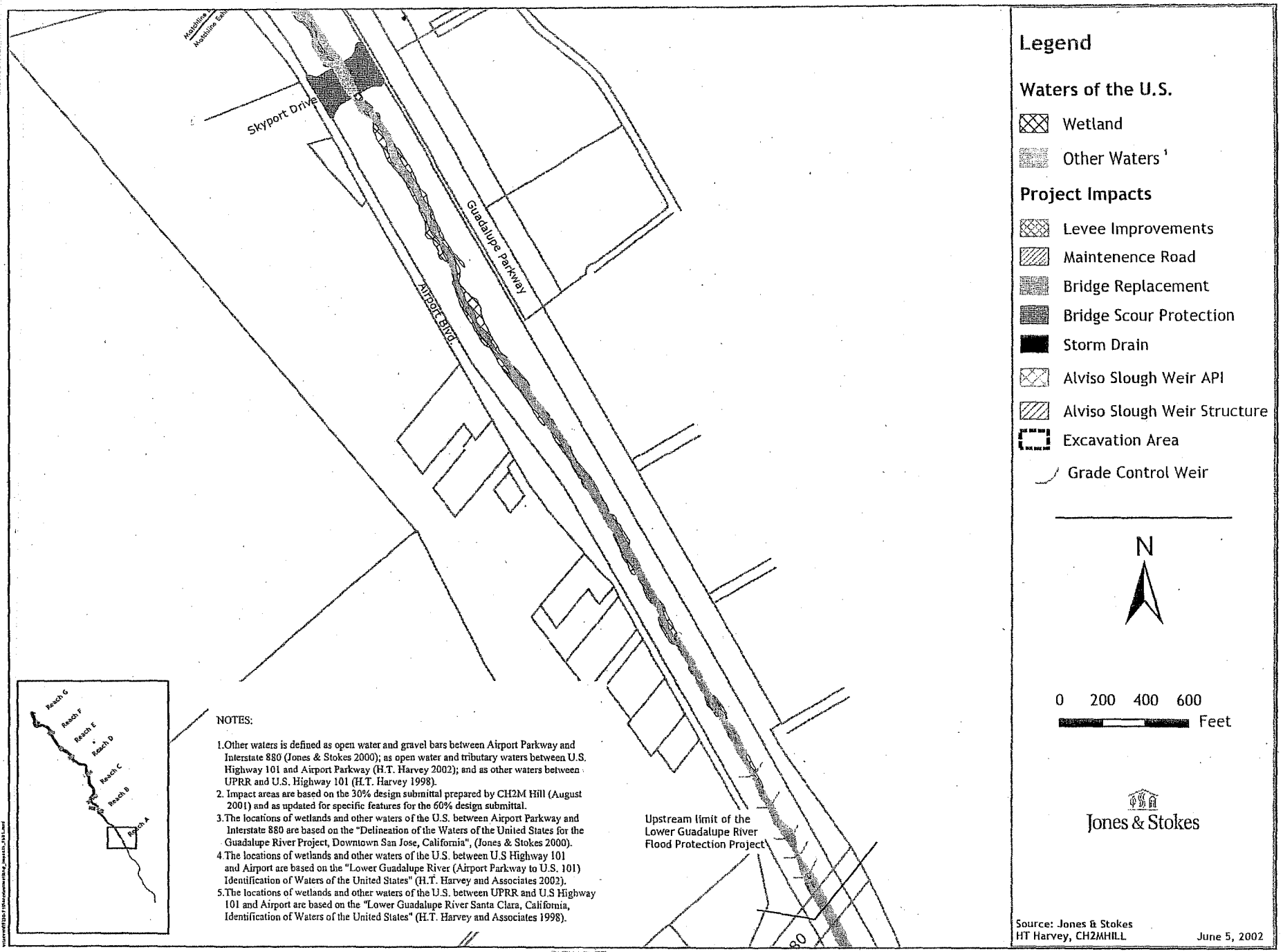


Guadalupe River Watershed Including Project Construction Areas



Location Map Showing Lower Guadalupe River Reaches

SHEET 2 OF



NOTES:

1. Other waters is defined as open water and gravel bars between Airport Parkway and Interstate 880 (Jones & Stokes 2000); as open water and tributary waters between U.S. Highway 101 and Airport Parkway (H.T. Harvey 2002); and as other waters between UPRR and U.S. Highway 101 (H.T. Harvey 1998).
2. Impact areas are based on the 30% design submittal prepared by CH2M Hill (August 2001) and as updated for specific features for the 60% design submittal.
3. The locations of wetlands and other waters of the U.S. between Airport Parkway and Interstate 880 are based on the "Delineation of the Waters of the United States for the Guadalupe River Project, Downtown San Jose, California", (Jones & Stokes 2000).
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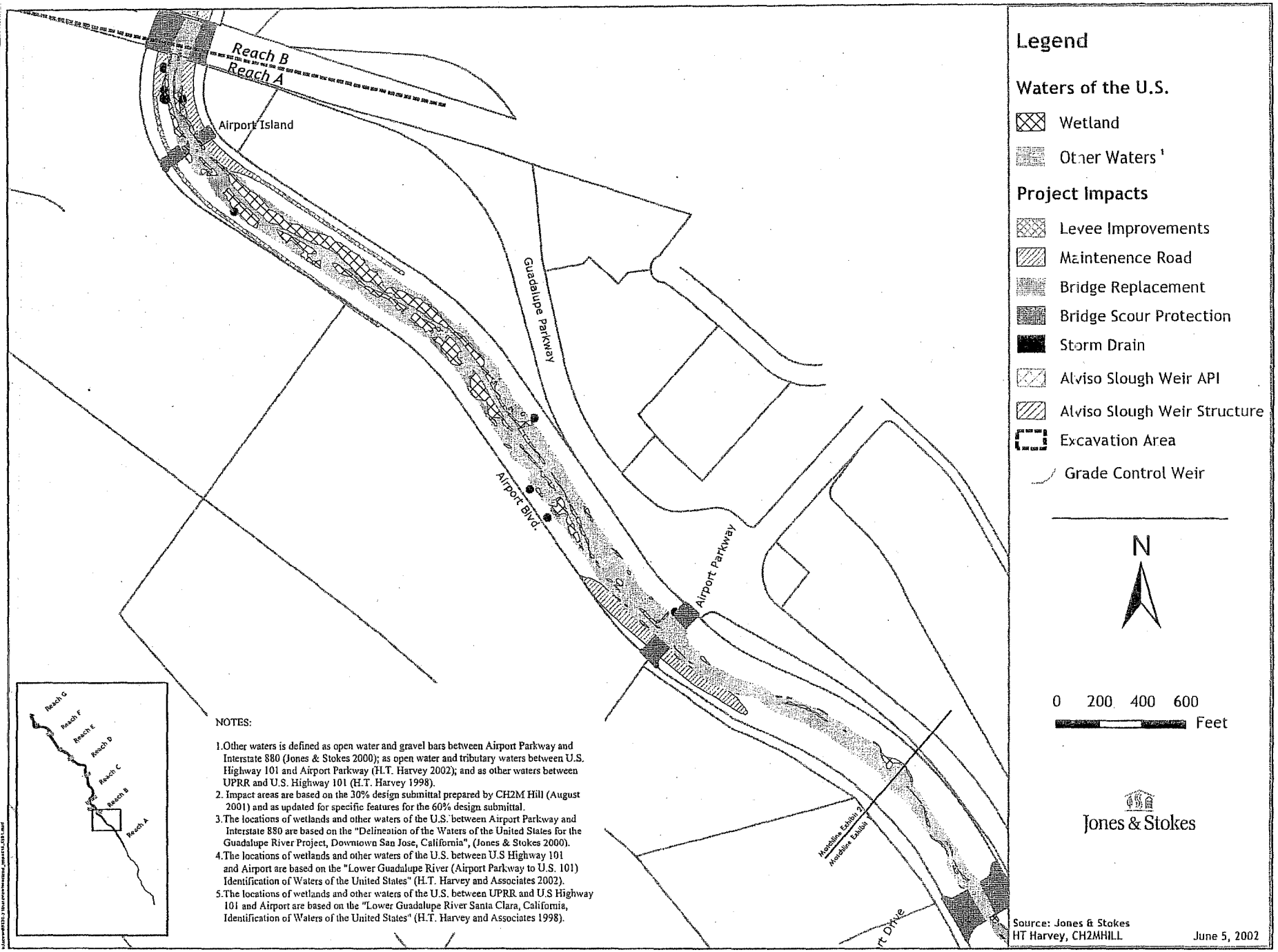
5. The locations of wetlands and other waters of the U.S. between UPRR and U.S Highway 101 and Airport are based on the "Lower Guadalupe River Santa Clara, California, Identification of Waters of the United States" (H.T. Harvey and Associates 1998).

Portion of Reach A - Lower Guadalupe River Flood Protection Project
Impacts from Proposed Project on Wetlands and Waters of the U.S.


Reach B
Reach A
Airport Island
Guadalupe Parkway
Airport Blvd.
Airport Parkway
Reach G
Reach F
Reach E
Reach D
Reach C
Reach B
Reach A
NOTES:
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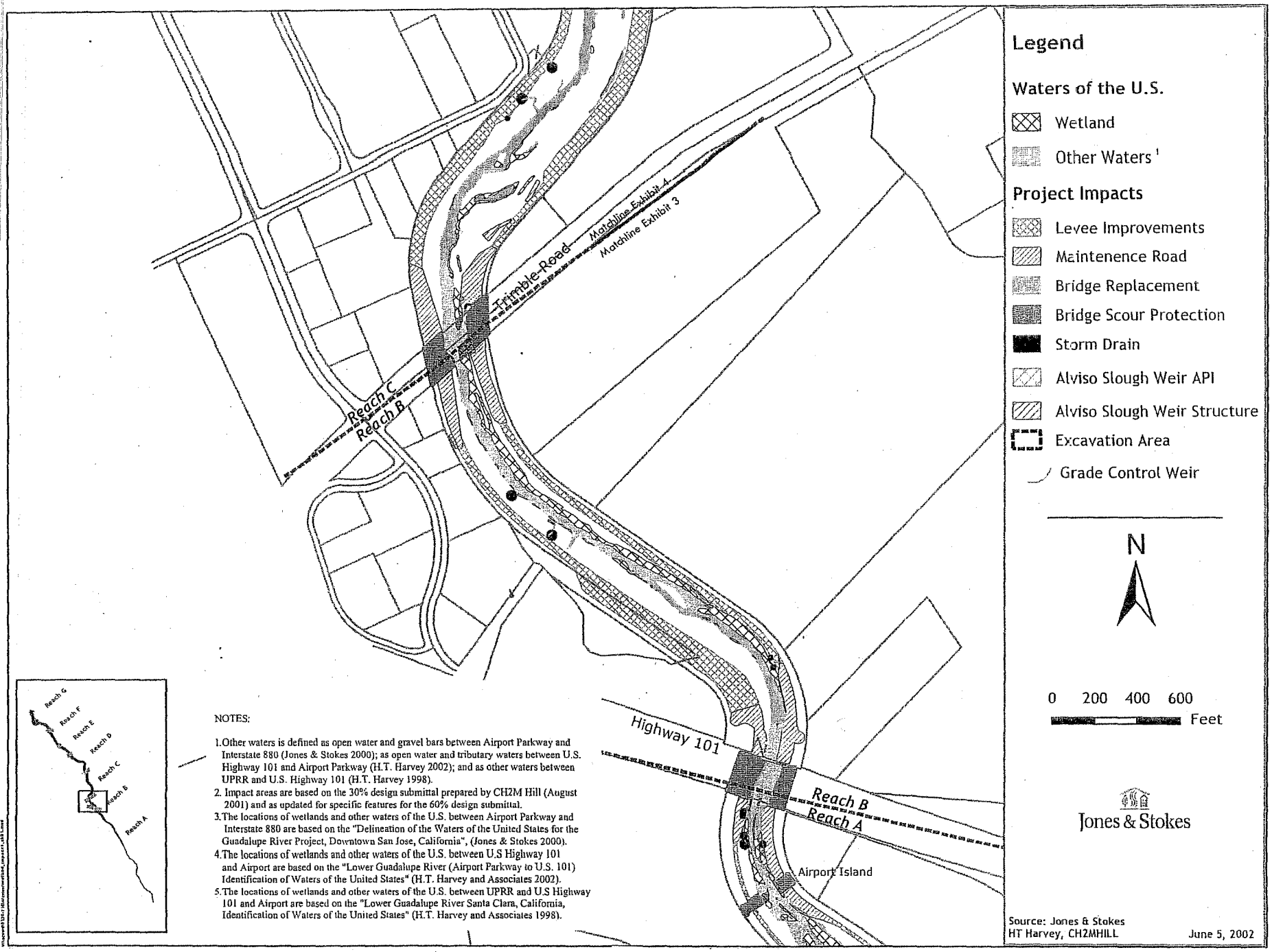
Legend
Waters of the U.S.
Wetland
Other Waters [1]
Project Impacts
Levee Improvements
Maintenence Road
Bridge Replacement
Bridge Scour Protection
Storm Drain
Alviso Slough Weir API
Alviso Slough Weir Structure
Excavation Area
Grade Control Weir
N
0 200 400 600
Feet
Jones & Stokes
Source: Jones & Stokes
HT Harvey, CH2MHILL
June 5, 2002

SHEET 4 OF 31 Portion of Reach A - Lower Guadalupe River Flood Protection Project
Impacts from Proposed Project on Wetlands and Waters of the U.S.



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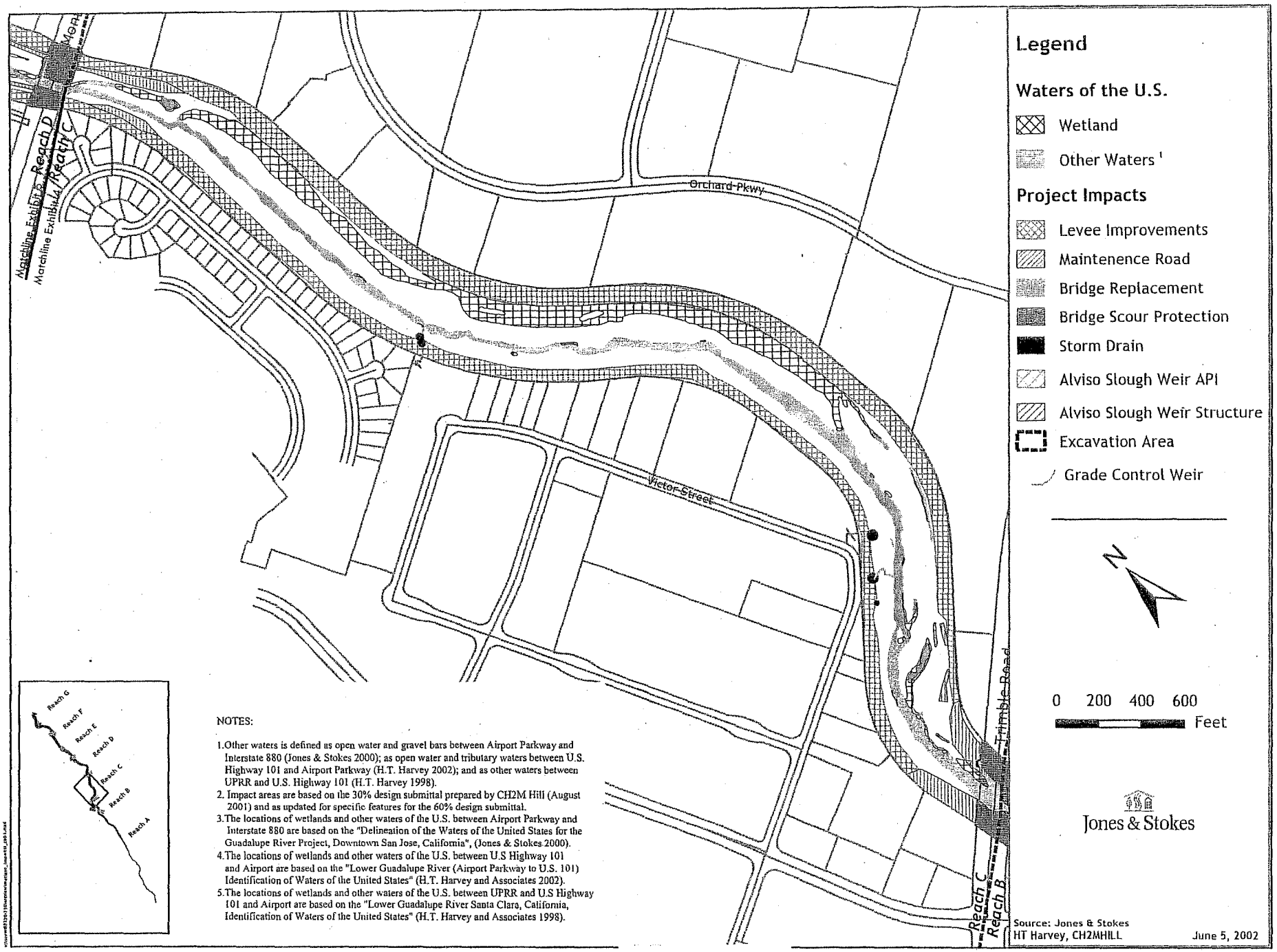
Reach B - Lower Guadalupe River Flood Protection Project
Impacts from Proposed Project on Wetlands and Waters of the U.S.



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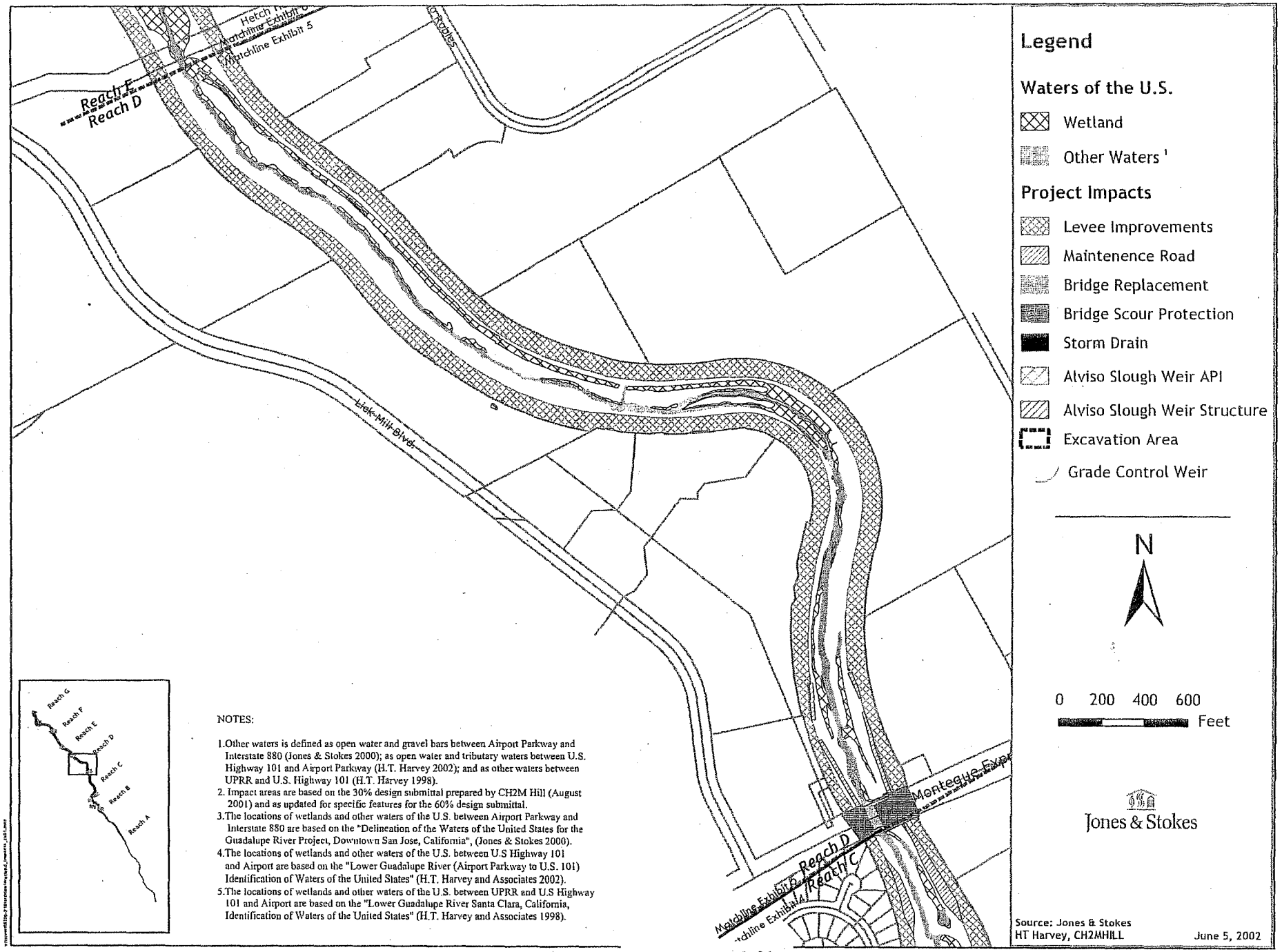
Reach C - Lower Guadalupe River Flood Protection Project
Impacts from Proposed Project on Wetlands and Waters of the U.S.


Reach F
Reach D
Matchline Exhibit 5
Matchline Exhibit 5
Coyotes
Lick Mill Blvd
Montague Expy
Reach D
Reach C
Matchline Exhibit 5
Matchline Exhibit 4
Reach G
Reach F
Reach E
Reach D
Reach C
Reach B
Reach A
NOTES:
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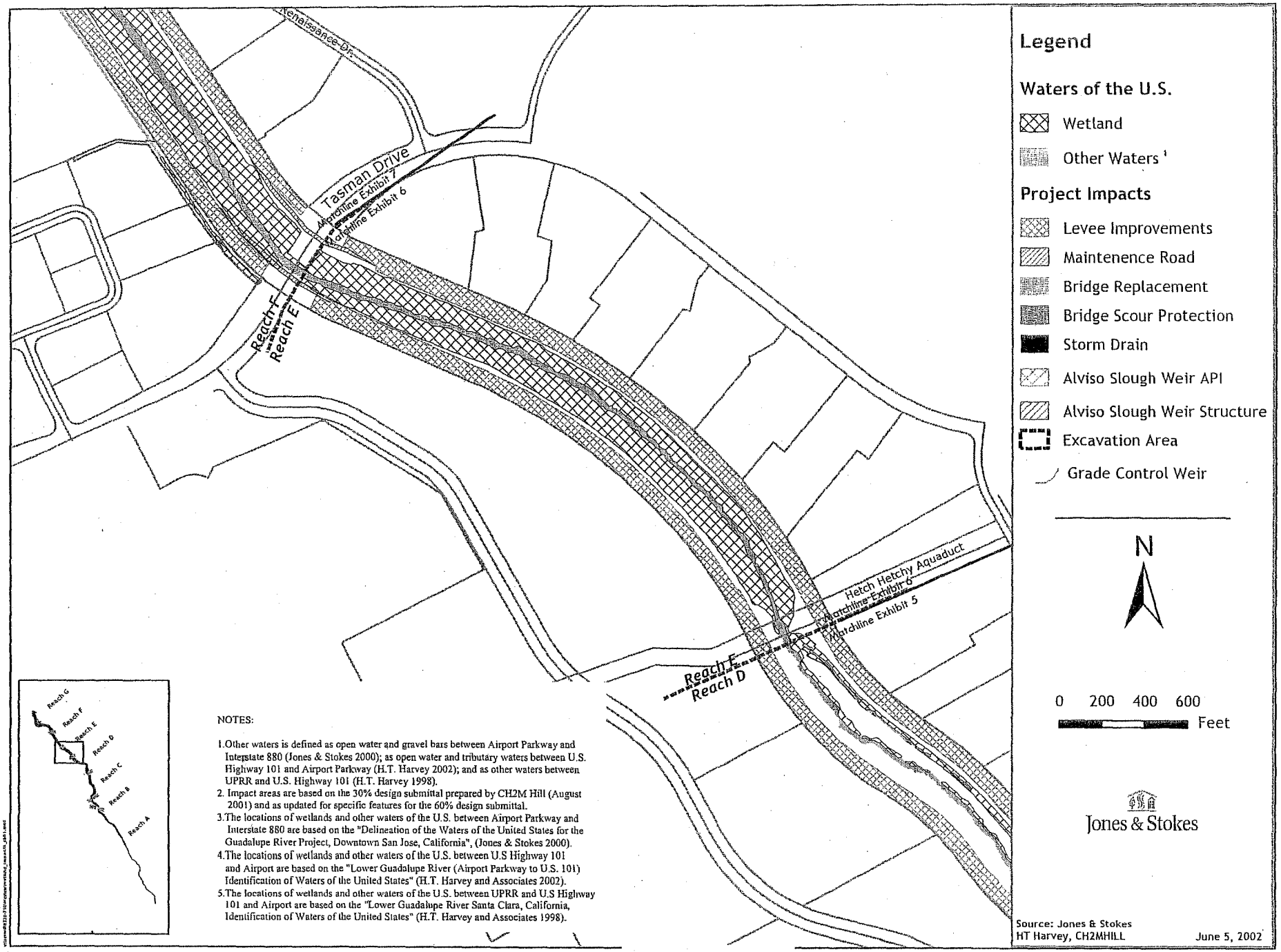
Legend
Waters of the U.S.
Wetland
Other Waters 1
Project Impacts
Levee Improvements
Maintenence Road
Bridge Replacement
Bridge Scour Protection
Storm Drain
Alviso Slough Weir API
Alviso Slough Weir Structure
Excavation Area
Grade Control Weir
N
0 200 400 600
Feet
Jones & Stokes
Source: Jones & Stokes
HT Harvey, CH2MHILL
June 5, 2002

SHEET 7 OF 31

Reach D - Lower Guadalupe River Flood Protection Project
Impacts from Proposed Project on Wetlands and Waters of the U.S.



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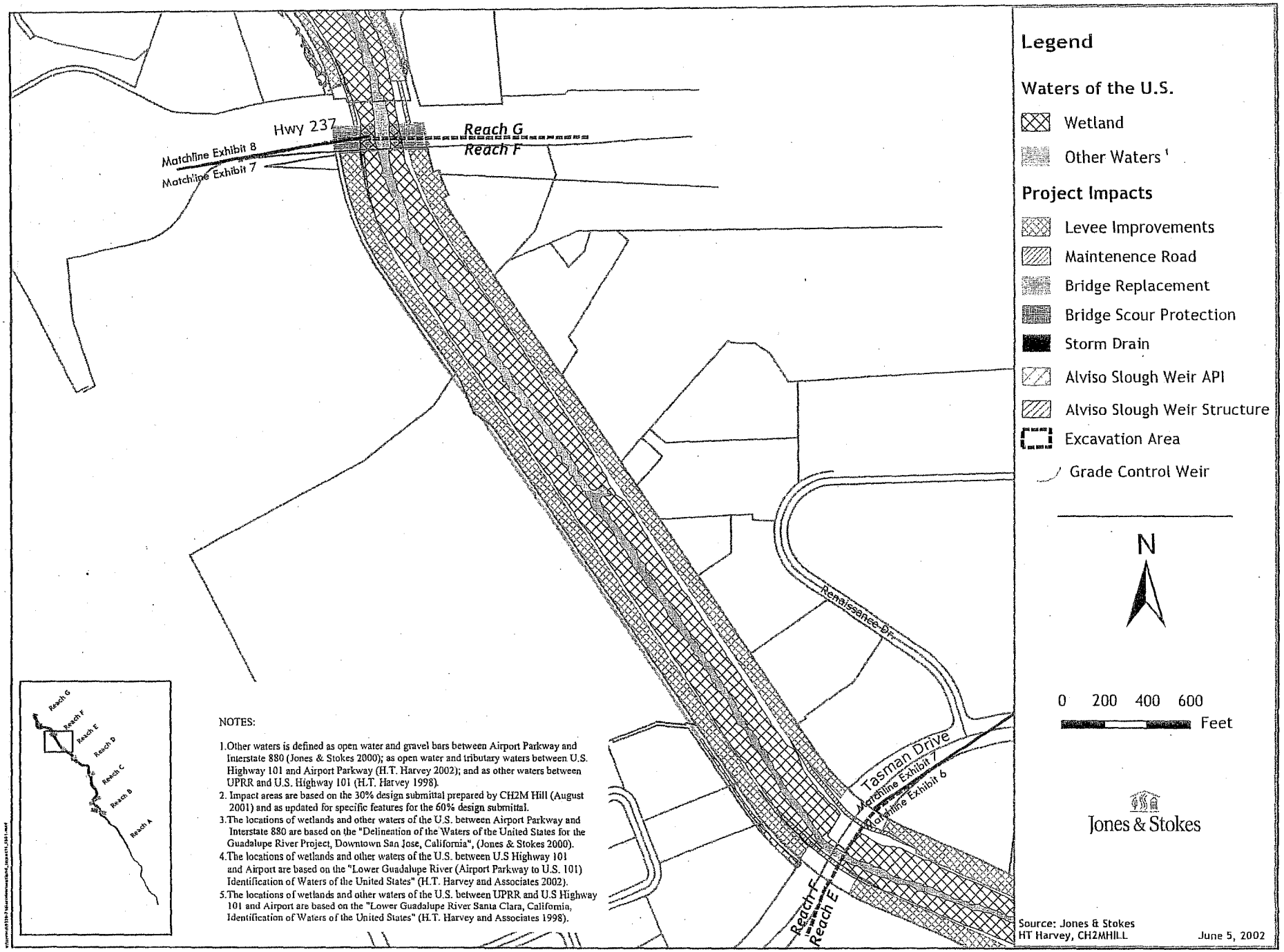
SHEET 8 OF 31

Reach E - Lower Guadalupe River Flood Protection Project
Impacts from Proposed Project on Wetlands and Waters of the U.S.


Hwy 237
Reach G
Reach F
Matchline Exhibit 8
Matchline Exhibit 7
Renaissance Dr
Tasman Drive
Matchline Exhibit 7
Matchline Exhibit 6
Reach F
Reach E
Reach G
Reach F
Reach E
Reach D
Reach C
Reach B
Reach A
NOTES:
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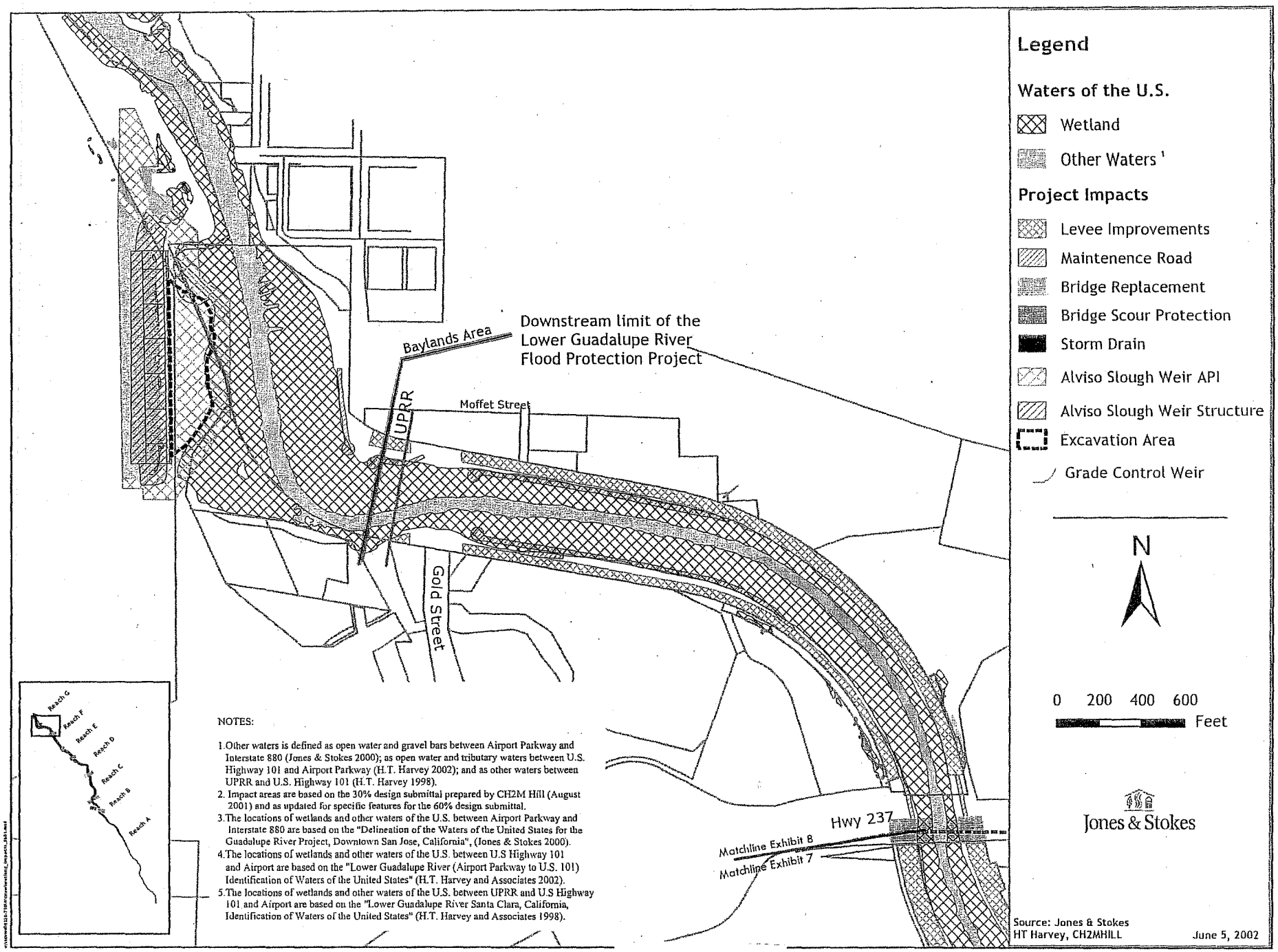
Legend
Waters of the U.S.
Wetland
Other Waters 1
Project Impacts
Levee Improvements
Maintenence Road
Bridge Replacement
Bridge Scour Protection
Storm Drain
Alviso Slough Weir API
Alviso Slough Weir Structure
Excavation Area
Grade Control Weir
N
0 200 400 600
Feet
Jones & Stokes
Source: Jones & Stokes
HT Harvey, CH2MHILL
June 5, 2002

SHEET 9 OF 31 Reach F - Lower Guadalupe River Flood Protection Project
Impacts from Proposed Project on Wetlands and Waters of the U.S.


Legend
Waters of the U.S.
Wetland
Other Waters [1]
Project Impacts
Levee Improvements
Maintenence Road
Bridge Replacement
Bridge Scour Protection
Storm Drain
Alviso Slough Weir API
Alviso Slough Weir Structure
Excavation Area
Grade Control Weir
N
0 200 400 600
Feet
Jones & Stokes
Source: Jones & Stokes
HT Harvey, CH2MHILL
June 5, 2002
Baylands Area
Downstream limit of the
Lower Guadalupe River
Flood Protection Project
Moffet Street
UPRR
Gold Street
Hwy 237
Matchline Exhibit B
Matchline Exhibit 7
Reach G
Reach F
Reach E
Reach D
Reach C
Reach B
Reach A
NOTES:
1.Other waters is defined as open water and gravel bars between Airport Parkway and Interstate 880 (Jones & Stokes 2000); as open water and tributary waters between U.S. Highway 101 and Airport Parkway (H.T. Harvey 2002); and as other waters between UPRR and U.S. Highway 101 (H.T. Harvey 1998).
2. Impact areas are based on the 30% design submittal prepared by CH2M Hill (August 2001) and as updated for specific features for the 60% design submittal.
3.The locations of wetlands and other waters of the U.S. between Airport Parkway and Interstate 880 are based on the "Delineation of the Waters of the United States for the Guadalupe River Project, Downtown San Jose, California", (Jones & Stokes 2000).
4.The locations of wetlands and other waters of the U.S. between U.S Highway 101 and Airport are based on the "Lower Guadalupe River (Airport Parkway to U.S. 101) Identification of Waters of the United States" (H.T. Harvey and Associates 2002).
5.The locations of wetlands and other waters of the U.S. between UPRR and U.S Highway 101 and Airport are based on the "Lower Guadalupe River Santa Clara, California, Identification of Waters of the United States" (H.T. Harvey and Associates 1998).

SHEET 10 OF 31

Reach G - Lower Guadalupe River Flood Protection Project
Impacts from Proposed Project on Wetlands and Waters of the U.S.

GENERAL ABBREVIATIONS

AB	Anchor Bolt, Aggregate Base
ABN	Abandon
ABUT	Abutment
AC	Asphalt Concrete
ACI	American Concrete Institute
ACM	Articulated Concrete Mat
ACP	Asbestos Cement Pipe
AGG	Aggregate
ALIGN	Alignment
ALT	Alternate
AP	Access Point
APPROX	Approximate
ASPH	Asphalt
ASSY	Assembly
AVG	Average
BC	Begin Curve
BF	Both Faces
BIT	Bituminous
BK	Bank
BLDG	Building
BM	Bench Mark
BOF	Bottom of footing
BOT	Bottom
BR	Bridge
BRNG	Bearing
BW	Barbed Wire
C	Curve, Chord
CB	Catch Basin
CCP	Concrete Cylinder Pipe
CFS	Cubic Feet per Second
CIP	Cast Iron Pipe, Cast In Place
CJ	Construction Joint
CLR	Clear, Clearance
CL-1.8	Chain Link Fence
cfs	Cubic feet per second
CMP	Corrugated Metal Pipe
CONC	Concrete
CONST	Construct, Construction
CONT	Continuous, Control
COL	Column
CRK	Creek
CSP	Corrugated Steel Pipe
CYL	Cylinder
DBL	Double
DEG(°)	Degree
DEP	Depressed
DET	Detail
DI	Drop Inlet
DIA	Diameter
DIP	Ductile Iron Pipe
DN	Down
DR	Drive
D/S	Downstream
DWG	Drawing(s)
DWS	Design Water Surface
E	East
EA	Each
EC	End Curve
EG	Existing Ground
EJ	Expansion Joint
ELECT	Electric, Electrical
ELEV/EL	Elevation
E'LY	Easterly
ENGR	Engineer, Engineering
EP	Edge Of Pavement
ESMT	Easement
EQ	Equal
EQU	Equation
E/UG	Electrica Underground
EW	Each Way
EXIST/EX	Existing
EXPW/EXPY	Expressway
FB	Freeboard
FD	Found
FF	Far Face
FG	Finish Grade
FH	Fire Hydrant
FO	Fiber Optic
FTG	Footing
FW	Floodwall
FWY	Freeway
G	Gas
GA	Gage, Gauge
GALV	Galvanized
GAP	Guy Anchor & Pole
GB	Grade Break
GFI	Ground Fault Interrupter
GP	Guy Pole
GR	Grade
GRND	Ground
GRP	Group

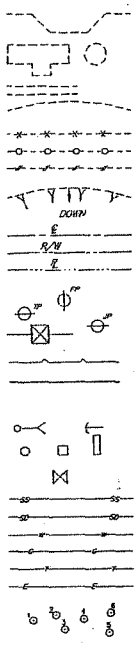
H	Height
H A	Hecton
H & T	Hub & Tack
HK	Hook (Applied to rebar)
HORIZ	Horizontal
HP	Hinge point, Horsepower
HW	Headwall
HWY	Highway
ID	Inside
IF	Diameter
IMPV	Inside Face
INV	Improvements
IP	Invert Iron
IRR	Pipe Irrigation
JP	Joint Pole
JT	Joint
JUNCT	Junction
L	Length
LAL	Layout Line
LN	Lane
LOL	Layout Line
LP	Lip Of Gutter
LT	Left
MAINT	Maintenance
MATL	Material(s)
MAX	Maximum
MEMB	Member
MFP	Modified Flood Plain
MH	Manhole
MIN	Minimum
MON	Monument
MSE	Mechanically Stabilized Embankment
MTL	Metal
N	North
N2	Nitrogen Line
N/A	Not Applicable, Not Available
NAD	North American Datum
NAVD	North American Vertical Datum
NE	Northeast
NE'LY	Northeasterly
NF	Near Face
NGVD	National Geodetic Vertical Datum
NIC	Not In Contract
N'LY	Northerly
NPDES	National Pollutant Discharge Elimination System
NTS	Not To Scale
NW	Northwest
NW'LY	Northwesterly
OC	On Center
OD	Outside Diameter
OF	Outside Face
OG	Original Ground
OH	Overhead
OPNG	Opening
PB	Pull Box Point of
PC	Point of Curvature
PCC	Portland Cement Concrete
PED	Pedestrian
PG	PROFILE GRADE
PI	Curve Point Of
POC	Point Of Compound
POB	Intersection Point Of
POT	Begining Point Of
PP	Tangent Power Pole
PRC	Reverse Curve Point,
PS	Pump Station Point Of
PSI	Pound Per Square Inch
PT	Point of Tangency
PVC	Polyvinyl Chloride Pipe
PVMT	Pavement
R	Radius
RC	Relative Compaction
RCB	Reinforced Concrete Box
RCL	Reclaimed
RCP	Reinforced Concrete Pipe
RD	Road
REBAR	Reinforcing Steel bar
REF	Reference (Refer)
REINF	Reinforcement, Reinforcing
REQ'D	Required
RET	Retaining
RSP	Rock Slope Protection
RT	Right
RTE	Route
RR	Railroad
RW	Retaining Wall
R/W	Right Of Way

S	South, Slope
SCSP	Sacked Concrete Slope Protection
SCHED	Schedule
SCVWD	Santa Clara Valley Water District
SD	Storm Drain, Standard Detail
SE	Southeast
SECT	Section
SED	Sediment
SE'LY	Southeasterly
SHT	Sheet, Sheets
S'LY	Southerly
SPECS	Specifications
SS	Sanitary Sewer
SRA	Shaded Riverine Aquatic
STA	Station
STD	Standard
STL	Steel
STR	Structure
SW	Southwest
SW'LY	Southwesterly
SYM	Symmetrical
T	Tangent, Telephone
TBM	Temporary Bench Mark
TC	Top Of Curb
TCA	Temporary Construction Area
TCE	Temporary Construction Easement
TD	Toe Drain
TFC	Traffic
TOB	Top Of Bank
TOC	Toe Of Channel
TP	Telephone Pole, Turning Point
TPT-1	Test Pit (Number=Designation
TS	Traffic Signal
TV	Television (Cable Or Facility)
TW	Top Of Wall(Location)
TYP	Typical
UB	Utility Box
UC	Utility Conduit
UG	Underground
UPRR	Union Pacific Railroad
UPRR	Union Pacific Rail
U/S	Upstream
U.S.A.C.E.	United States Army Corps of Engineers
USC&GS	United States Coastal & Geodetic Survey
VCP	Vitrified Clay Pipe
VERT	Vertical
W	With, Water, West, Width (Wide)
WD	Wood (Wooden)
W'LY	Westerly
W/O	Without
WS	Water Surface
WSP	Water Surface Profile
WT	Weight
WV	Water Valve
WW	Wing Wall
WWF	Welded Wire Fabric
X-Sect	Cross Section
Z	Zone

METRIC UNITS (SI)

A	ampere
°C	degree Celsius
cms	cubic meters per second
km	kilometer
kpa	kilo Pascals
kV	kilovolt
kW	kilowatt
l	liter
mm	millimeter
m	meter, meters
m^2	square meter
m^3	cubic meter
m/s	meter per second
MPa	megapascal
s	second
Q	Design Discharge (m^3/s)

EXISTING

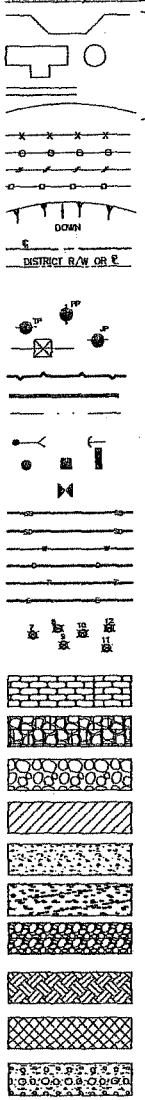


SPECIAL ABBREVIATIONS

"E" LINE	East Levee Control Line
"P" LINE	Preliminary Engineering Control Line
"W" LINE	West Levee Control Line
WALL	Retaining Wall Tie Back Wall MSE Wall

LEGEND

TO BE CONSTRUCTED/ INSTALLED/RELOCATED



- Facilities
- Barbed Wire Fence
- Chain Link Fence
- Wooden Fence
- Preservation Fence
- Slope Of Bank
- Center Line Or Control Line
- Right Of Way
- Property Line
- Power Pole (PP)
- Joint Pole (JP)
- Telephone Pole (JP)
- Tower
- As Designated
- Retaining Wall
- Floodwall
- Sediment Removal Area
- Guy Anchor
- Utilities Boxes (As Abbreviated)
- Valve
- Sanitary Sewer
- Storm Drain
- Water Line
- Gas Line
- Telephone Line
- Electric Line
- Trees (Number Denotes Size & Kind Of Tree Shown In Table)
- Sacked Concrete Lining
- Gabion Lining
- Rock Lining/Grouted Rock Lining/Rip Rap
- Asphalt Concrete
- Concrete
- Levee Improvements
- Aggregate Base
- Earth
- To be removed
- Gravel

- 4/10 — 4 Indicates Detail Number; 10 Indicates Sheet Number On Which Detail Appears
- A/10 — A Indicates Section; 10 Indicates Sheet Number On Which Section Appears
- BO-1/S-4 — Indicates Caltrans Standard Plans Dated July 1999; BO-1 Indicates Standard Plan Sheet Number; S-4 Indicates Detail Number
- Survey Monument Or Horizontal Control Point
- Bench Mark
- Panel Point (Aerial)
- Water Surface (Profile)
- 3 — Drilled Soil Test Sample
- (E,W,C) B # # — Drilled Soil Test Sample; EAST, WEST, Channel; # # = Log Number
- S — Surface Soil Test Sample
- TP-1 — Test Pit (Nr. = Location/Designation)
- AP — Access Point From Public Street, Highway Or Freeway
- ER — Exist. Ramp
- S=0.02 — Slope (2 m/100 m, 2%)
- Angle
- & — And
- @ — At
- ℄ — Control Line or Center Line
- FL — Flow Line
- % — Percent
- PL — Property Line
- Ø — Circular Diameter
- # — Number
- 125 — Numerical Point Designation
- Monument Set As Noted
- I.P. Set
- Found Iron Pipe As Noted
- Found St'd. City Monument
- C5 TS — Curve Or Tangent Identification Number
- S — Stream Gauge

REV	DESCRIPTION	DATE	APPR	REFERENCE INFORMATION AND NOTES

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
SAN JOSE, CALIFORNIA 95112-4524
(408)436-4800

REGISTERED PROFESSIONAL ENGINEER — Daniel Anthony Von Rosenberg — RCE 35428 — EXP. 03/31/04 — CIVIL — STATE OF CALIFORNIA

DATE 07/01/02
DESIGN T.M.J.
DRAWN A.A.V.
CHECKED E.E.G.

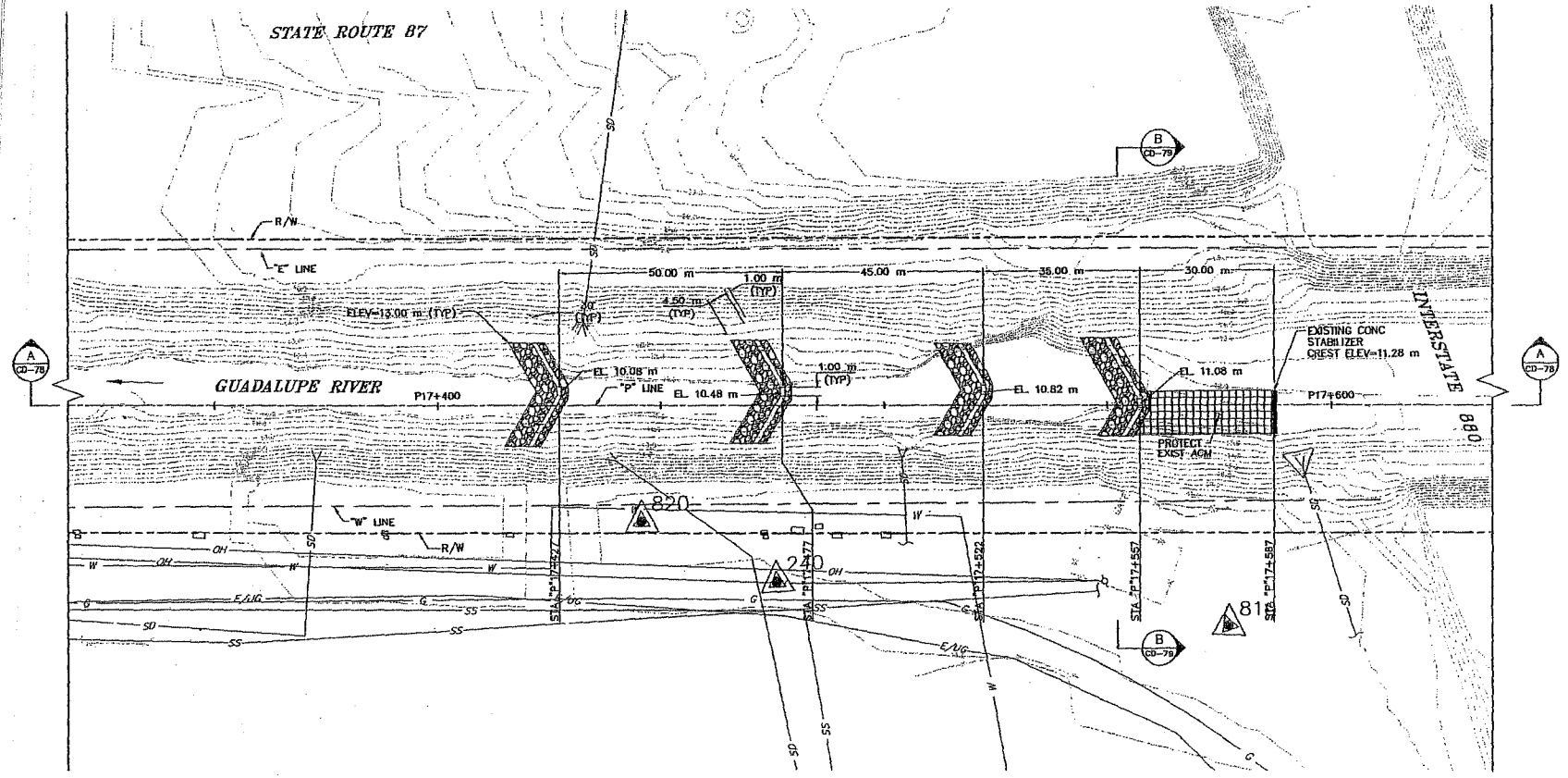
Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

GENERAL ABBREVIATIONS AND LEGEND

VERIFY SCALES 0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN
SHEET A-4
4 OF 420



1:500 0 25 50 M

REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

FOR UTILITY INFORMATION, SEE "C" SHEETS.

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
SAN JOSE, CALIFORNIA 95112-4524
(408)436-4909

REGISTERED PROFESSIONAL ENGINEER Dominic Michael Von Raesfeld RCE 26428 EXP. 03/31/04 CIVIL STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	I.E.F.
DRAWN	A.A.V
CHECKED	C.L.E.

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN WEIR STABILIZER

VERIFY SCALES 0 25

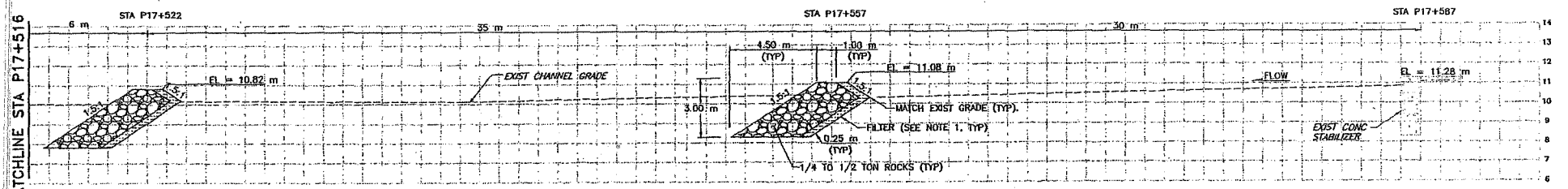
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN

SHEET CD-7

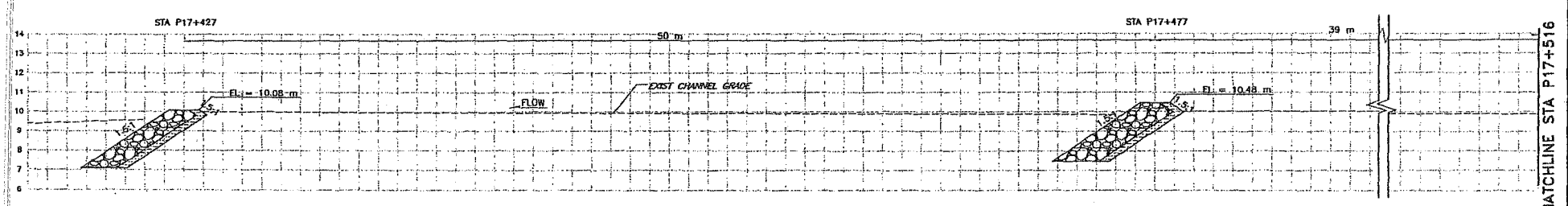
174 OF 40

SHEET 12 OF 31



NOTE:

1) BUILD 0.25 m FILTER OF FINES MATERIAL THROUGH GRAVELS TO SEAL STABILIZER. NO FILTER NEEDED FOR EXCAVATION THROUGH CLAYS.



SECTION A (CD-78) PROFILE THRU STABILIZER CREST

SCALE: H 1:100
V 1:100

REV	DESCRIPTION	DATE	APPR	REFERENCE INFORMATION AND NOTES

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REGISTERED PROFESSIONAL ENGINEER — Dana Michael Von Haden — RCE 26428 EXP. 03/31/04 — CIVIL — STATE OF CALIFORNIA

DATE	06/08/02
DESIGN	L.E.F.
DRAWN	A.A.V
CHECKED	C.L.E.

Santa Clara Valley Water District

ACCEPTED BY DISTRICT _____ DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER
FLOOD PROTECTION PROJECT

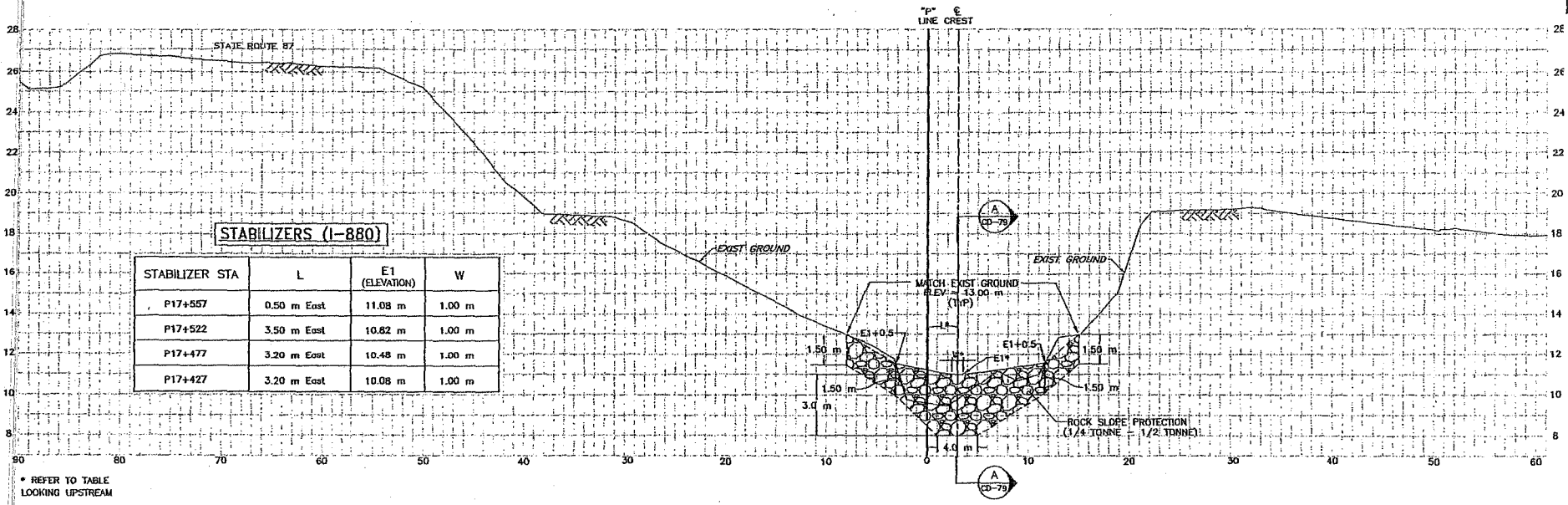
PROFILE
WEIR STABILIZER

VERIFY SCALES 0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN

SHEET CD-78

175 OF 407



STABILIZERS (I-880)

STABILIZER STA	L	E1 (ELEVATION)	W
P17+557	0.50 m East	11.08 m	1.00 m
P17+522	3.50 m East	10.82 m	1.00 m
P17+477	3.20 m East	10.48 m	1.00 m
P17+427	3.20 m East	10.08 m	1.00 m

* REFER TO TABLE
LOOKING UPSTREAM

SECTION (B / CD-79) STABILIZER TYPICAL SECTION

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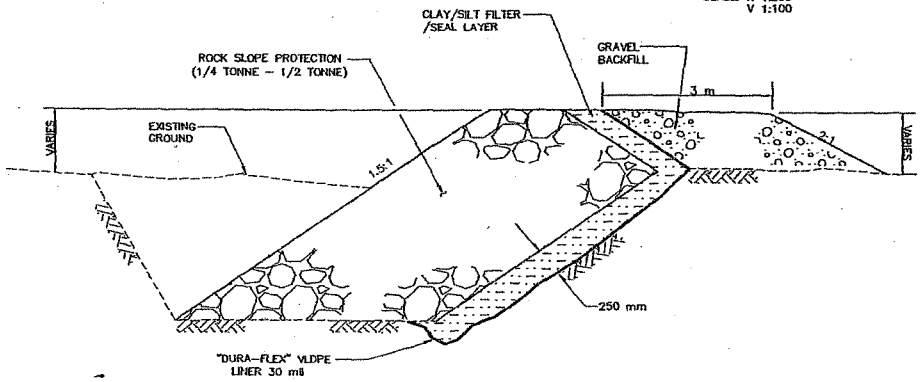
V 1:100



SECTION (A / CD-79) DETAIL SECTION

SCALE: N.T.S.

NOTES:

1. RIPRAP TO BE PLACED IN LIFTS ABOUT 1 STONE THICK. CLAY/SILT/GRAVEL MIX PLACED IN VOIDS, TAKING CARE TO ENSURE FILLING OF ALL VOIDS.
2. VLDPE LINER TO BE PLACED ON EXCAVATION NEAT LINE DIRECTLY AGAINST NATIVE MATERIAL. CARE MUST BE TAKEN TO ENSURE NO SHARP STONES OR OTHER OBJECTS CONTACT LINER.
3. CLAY SILT FILTER/SEAL MATERIAL PLACED ON TOP OF VLDPE LINER TO THE GREATER OF 0.25 METER DEPTH OR THAT SUFFICIENT TO PREVENT LARGE ROCKS FROM CONTACTING, TEARING, OR OTHERWISE SIGNIFICANTLY DEFORMING LINER MATERIAL.
4. SUCCESIVE LIFTS OF ROCK "DIRTY" FILL MIX, FILTER/SEAL BEDDING MATERIAL, AND VLDPE LINER SHALL BE PLACED UNTIL FULL HEIGHT IS REACHED.
5. GRAVEL BACKFILL SUITABLE FOR SPAWNING SHALL BE PLACED BEHIND COMPLETED STABILIZER UP TO CREST ELEVATION.

REV	DESCRIPTION	DATE	APPR	REFERENCE INFORMATION AND NOTES

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REGISTERED PROFESSIONAL ENGINEER
David Michael VanHoozer
RCE 28428
EXP. 03/31/04
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STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	L.E.F.
DRAWN	A.A.V
CHECKED	C.L.E.

Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

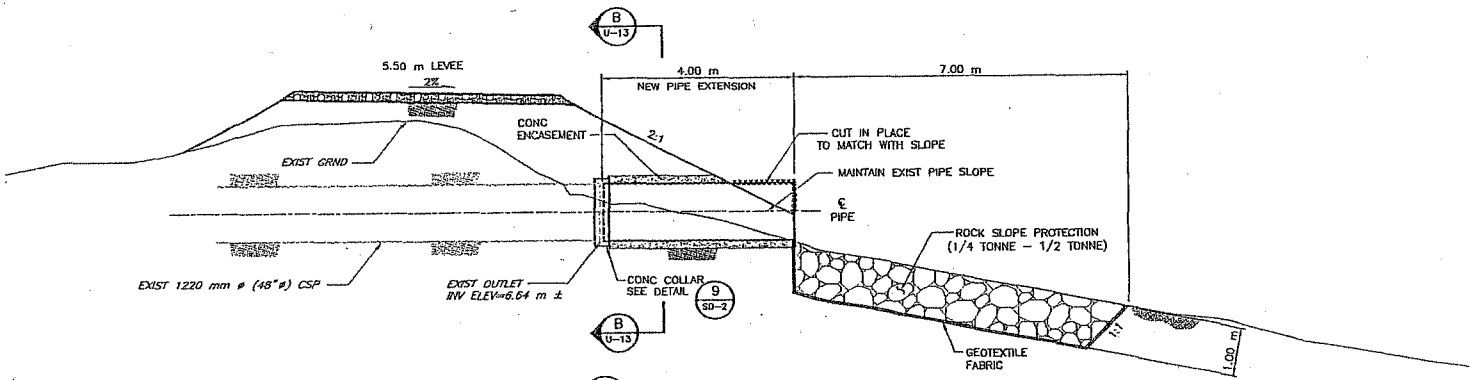
TYPICAL SECTION WEIR STABILIZER

VERIFY SCALES 0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

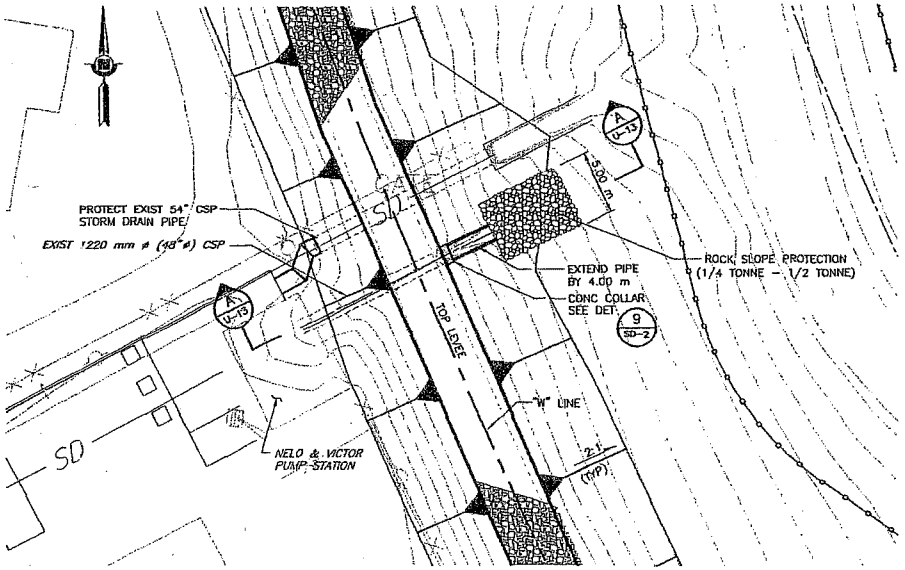
SCALE AS SHOWN

SHEET CD-79

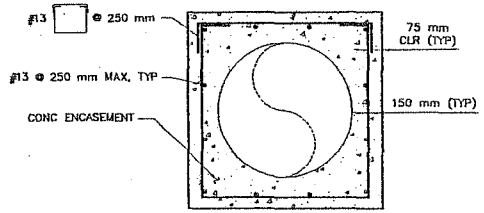
176 OF 407



SECTION A U-13 ACROSS LEVEE
AT STA P12+476 WEST BANK (W45+726)
SCALE: 1:50



DETAIL 1 U-13 PLAN VIEW
AT STA P12+476 WEST BANK (W45+726)
SCALE: 1:200



SECTION B U-13 ACROSS PIPE
SCALE: NTS

REV	DESCRIPTION	DATE	APPR	REFERENCE INFORMATION AND NOTES

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
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Steven Michael Von Gunten
No. 25428
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STATE OF CALIFORNIA

DATE	07/01/02
DESIGN	I.E.F.
DRAWN	A.A.V
CHECKED	C.L.E.

Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

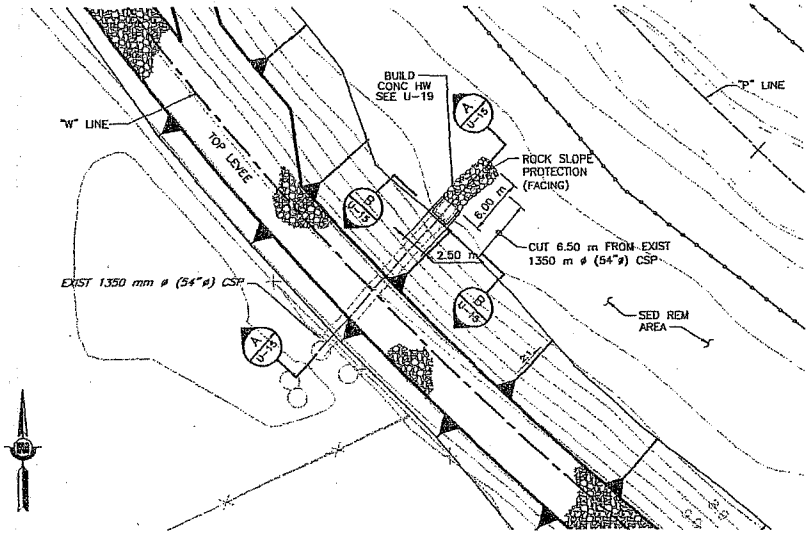
LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

UTILITY DETAILS
STORM DRAIN
STA P12+476

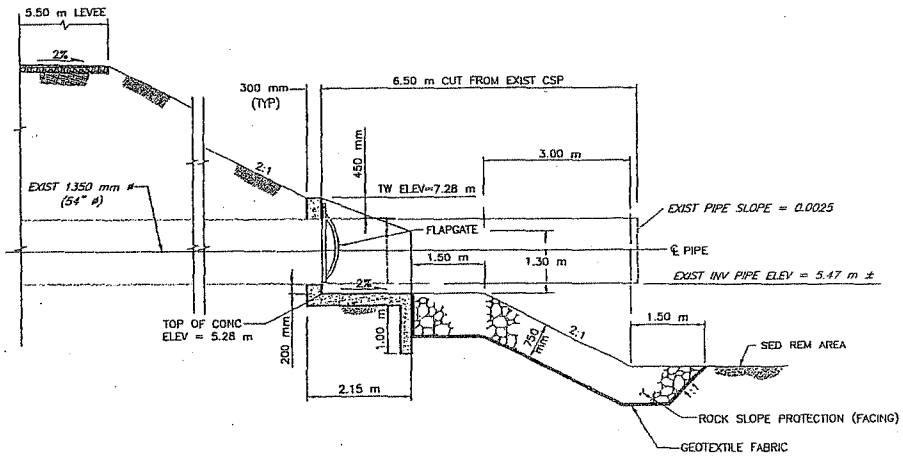
VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS
ON ORIGINAL DRAWING
IF NOT ADJUST
SCALES ACCORDINGLY

SCALE
AS SHOWN

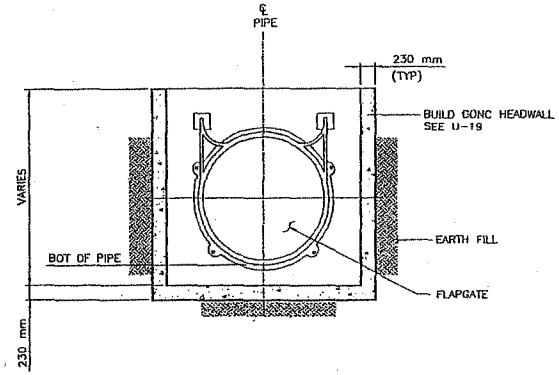
SHEET
U-13
251 OF 420



DETAIL 1 / U-15 PLAN VIEW
AT STA P13+932 WEST BANK (W47+196)
SCALE: 1:200



SECTION A / U-15 ACROSS LEVEE WEST BANK
AT STA P13+932
SCALE: 1:50



SECTION B / U-15 CONC HEADWALL
SCALE: NTS

Rev B

REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES
1. MIN CONC COVER OVER REINF SHALL BE AS FOLLOWS:
CAST AGAINST EARTH = 76 mm
EXPOSED TO WEATHER = 50 mm

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
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REGISTERED PROFESSIONAL ENGINEER — David Michael Yoon — RCE 25428 EXP. 03/31/04 — CIVIL — STATE OF CALIFORNIA

DATE	07/01/02
DESIGN	I.E.F.
DRAWN	A.A.V
CHECKED	C.L.E.

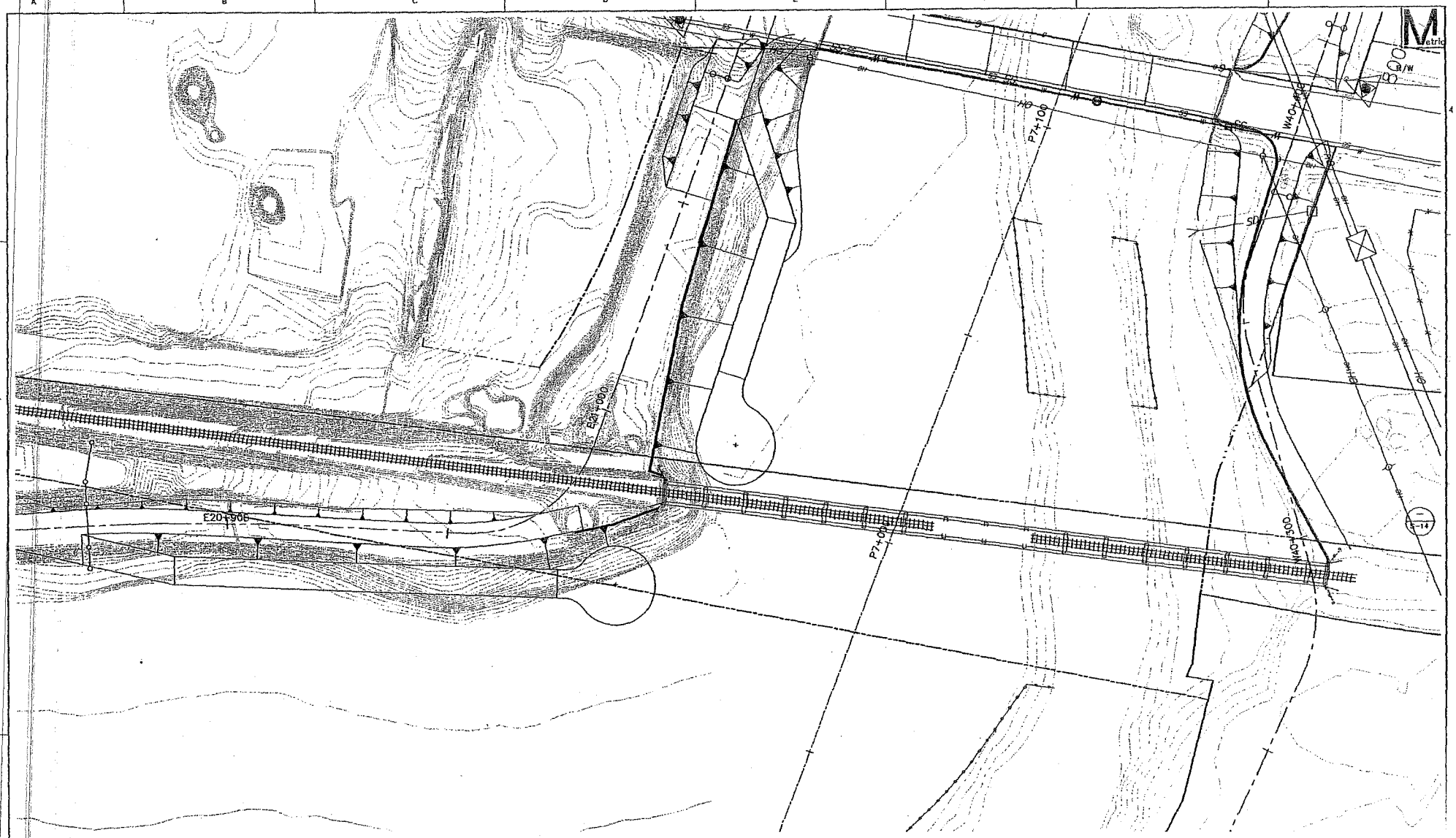
Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

UTILITY DETAILS
STORM DRAIN
STA P13+932

VERIFY SCALES 0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN
SHEET U-15
253 OF 420



REV.	DESCRIPTION	DATE	APPR.

REFERENCE INFORMATION AND NOTES

FOR UTILITY INFORMATION, SEE "C" SHEETS.

CH2MHILL
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David Michael Von Raesfeld
No. 25428
EXP. 03/31/04
CIVIL
STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	W.S.B.
DRAWN	J.A.U./S.N.L.
CHECKED	E.E.G.

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
UPRR BRIDGE

VERIFY SCALES
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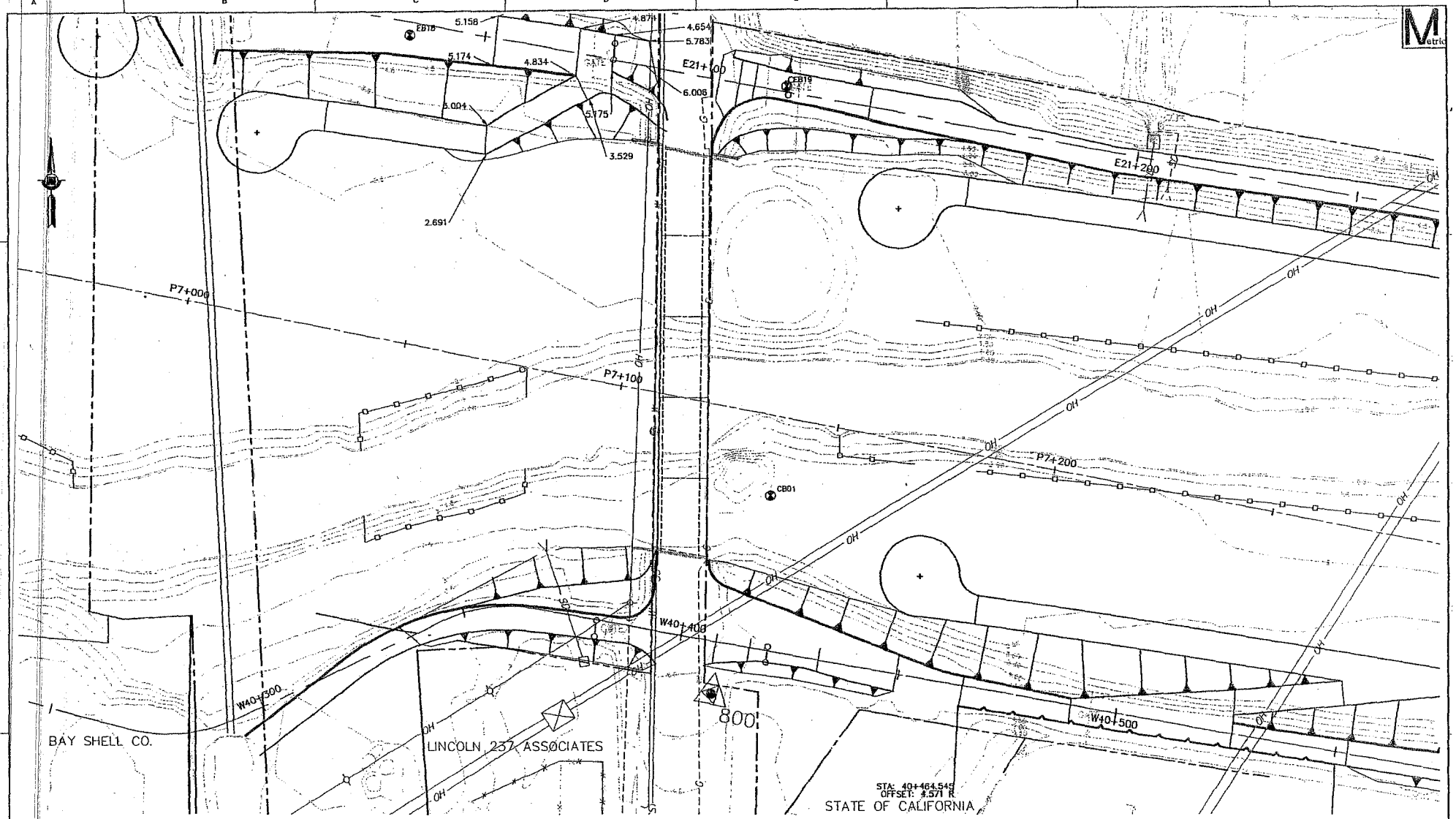
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN

SHEET CD-4

101 OF 407

SHEET 17 OF 31



DETAIL 1 / CD-7 PLAN

SCALE: 1:400

1:400

REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

FOR UTILITY INFORMATION, SEE "C" SHEETS.

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
SAN JOSE, CALIFORNIA 95112-4524
(408)436-4909

REGISTERED PROFESSIONAL ENGINEER — David Jackson Von Hagen — RCE 25428 EXP. 03/31/04 — Civil — STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	W.S.B.
DRAWN	J.A.M./S.N.J.
CHECKED	E.E.G.

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
GOLD STREET BRIDGE

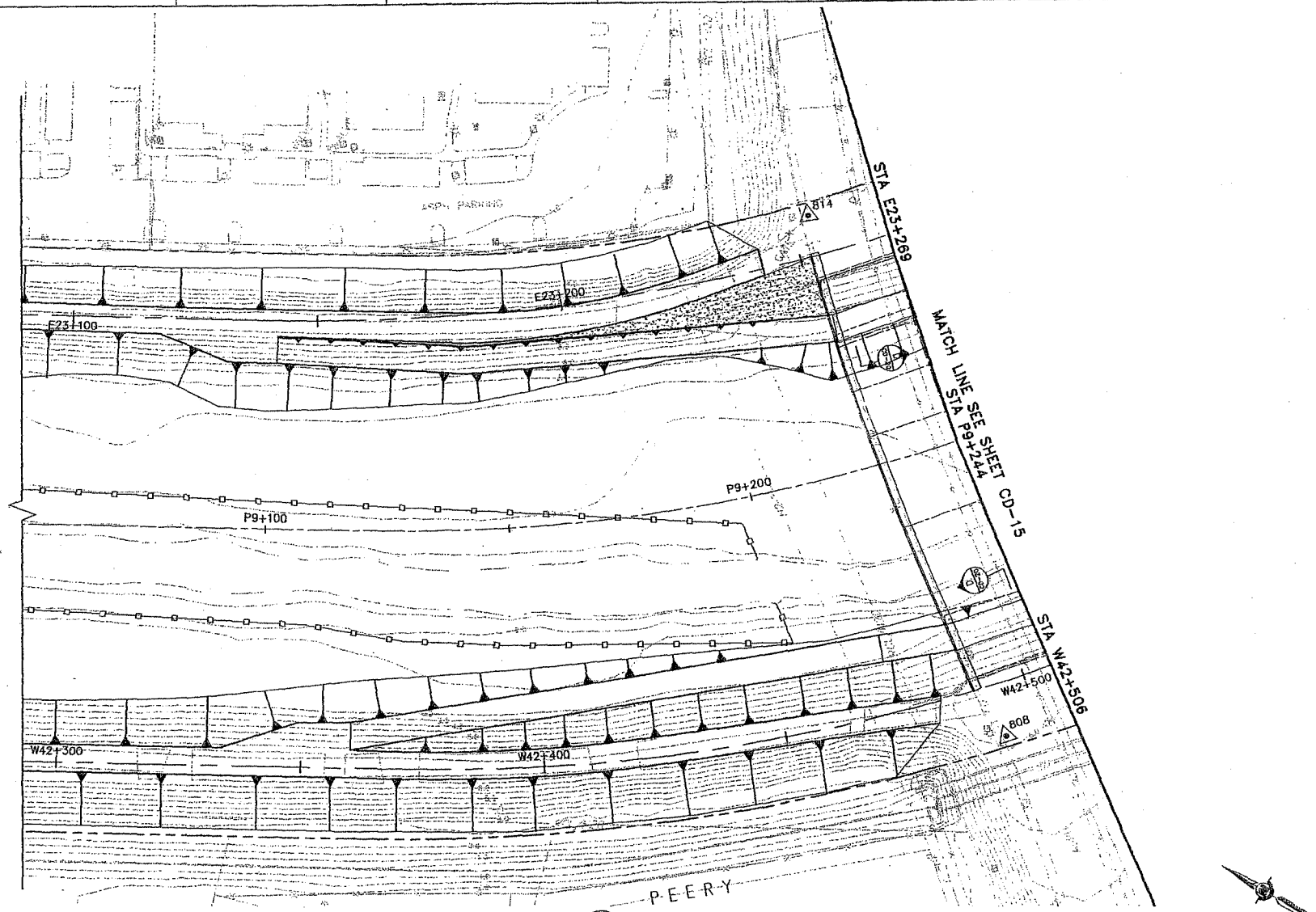
VERIFY SCALES 0 25

BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN

SHEET CD-7

104 OF 407



DETAIL 1 (CD-14) PLAN

SCALE: 1:400

REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

FOR UTILITY INFORMATION, SEE "C" SHEETS.

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(408)436-4909

REGISTERED PROFESSIONAL ENGINEER — David Michael Van Brunschot — RCE 28428 EXP. 03/31/04 — CIVIL — STATE OF CALIFORNIA

DATE	06/06/02
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DRAWN	J.A.M./S.N.L.
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Santa Clara Valley Water District

ACCEPTED BY DISTRICT

DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
TASMAN DRIVE BRIDGE
STA P9+050 TO STA P9+244

VERIFY SCALES
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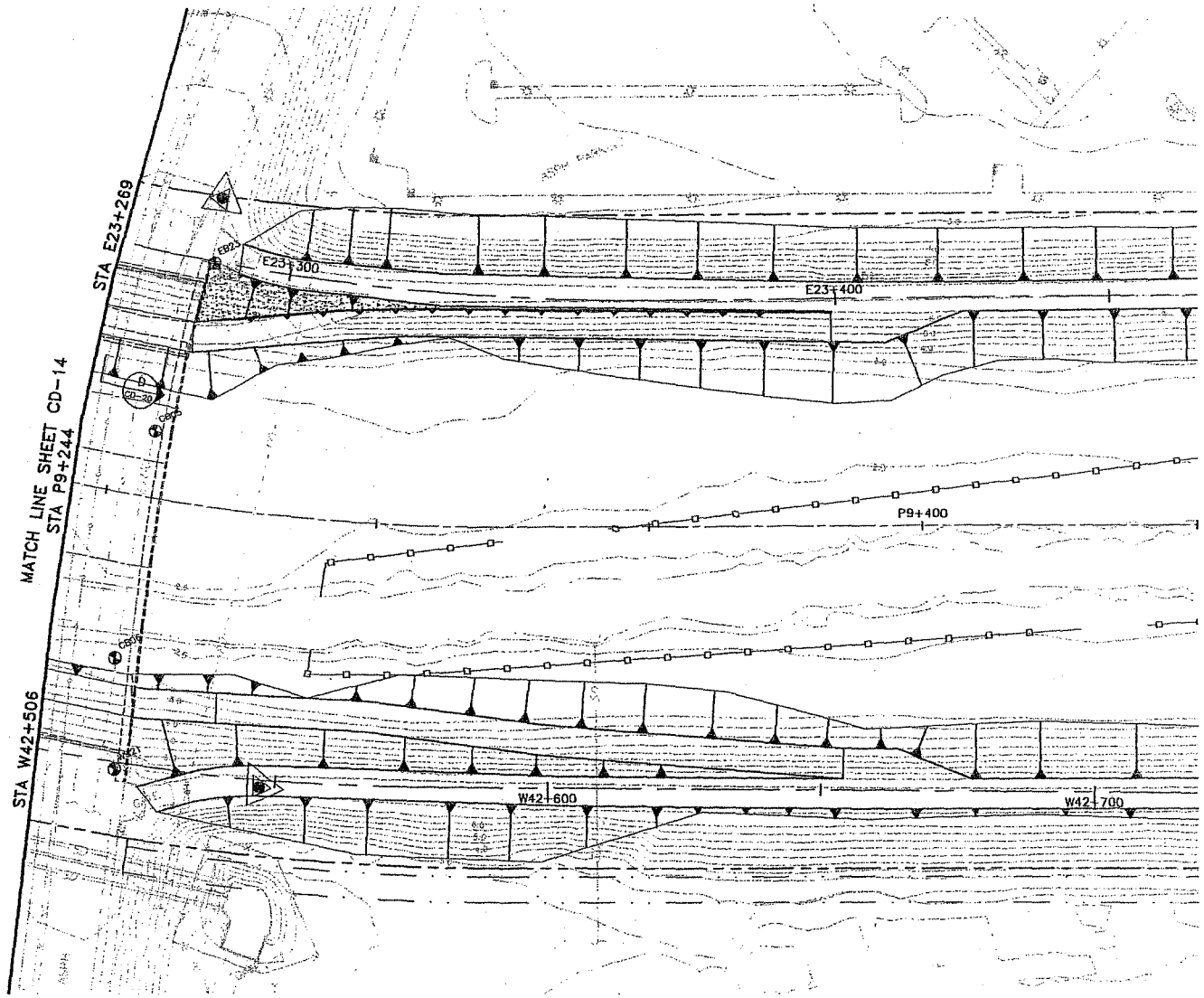

DETAIL 1 / CD-15 PLAN

SCALE: 1:400

REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

FOR UTILITY INFORMATION, SEE "G" SHEETS.

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
SAN JOSE, CALIFORNIA 95112-4524
(408)438-4909

REGISTERED PROFESSIONAL ENGINEER — David Michael VanMaren — RCE 28428 EXP. 03/31/04 — CIVIL — STATE OF CALIFORNIA

DATE	06/06/02
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DRAWN	J.A.M./S.N.I.
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Santa Clara Valley Water District

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DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
TASMAN DRIVE BRIDGE
STA 9+244 TO STA 9+450

VERIFY SCALES
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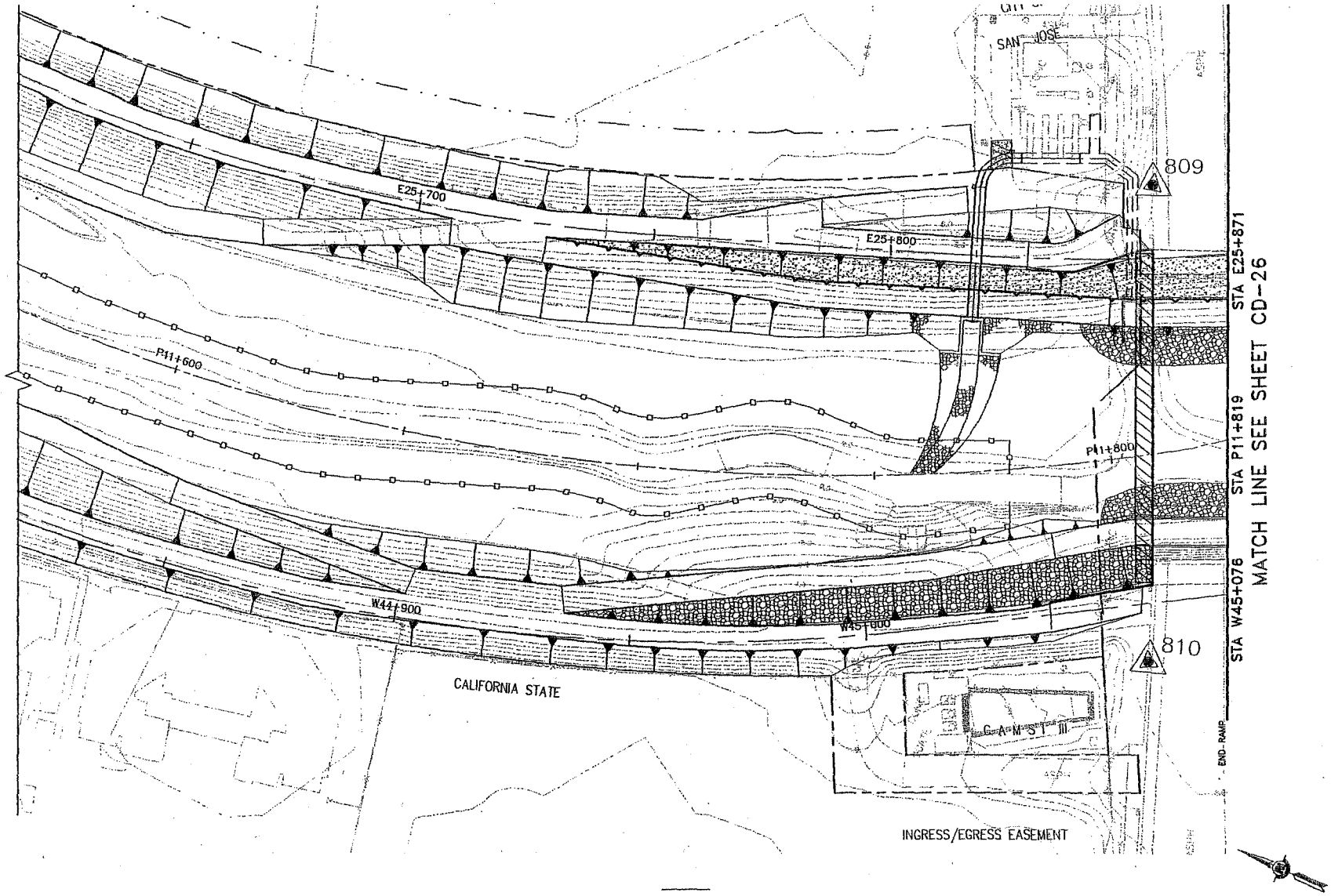
112 OF 4



REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

FOR UTILITY INFORMATION, SEE "C" SHEETS.

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
SAN JOSE, CALIFORNIA 95112-4524
(408)436-4909

REGISTERED PROFESSIONAL ENGINEER — John Manuel Vorhies — No. 26428 — EXP. 03/31/04 — CIVIL — STATE OF CALIFORNIA

DATE 05/08/02
DESIGN W.S.B.
DRAWN J.A.M./S.R.L.
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Santa Clara Valley Water District

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DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN MONTAGUE EXPRESSWAY BRIDGE

VERIFY SCALES
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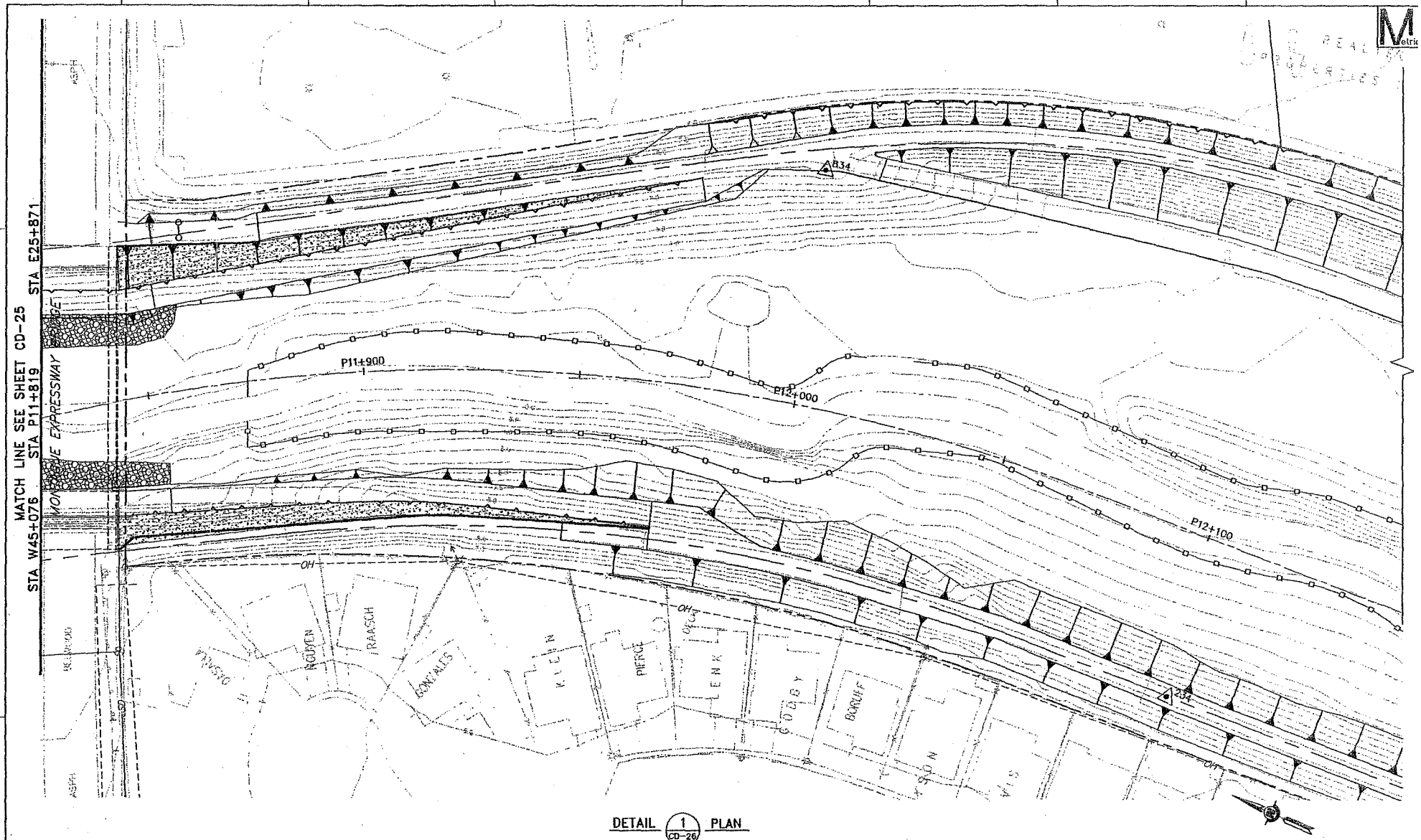

DETAIL 1 / CD-26 PLAN

SCALE: 1:400

REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES
FOR UTILITY INFORMATION, SEE "C" SHEETS.

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
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(408)436-4909

REGISTERED PROFESSIONAL ENGINEER
Edward Michael Von Raesfeld
RCE 26428
EXP. 03/31/04
CIVIL
STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	W.S.B.
DRAWN	J.A.M./S.N.I.
CHECKED	E.E.G.

Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
MONTAGUE EXPRESSWAY BRIDGE

VERIFY SCALES
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BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN
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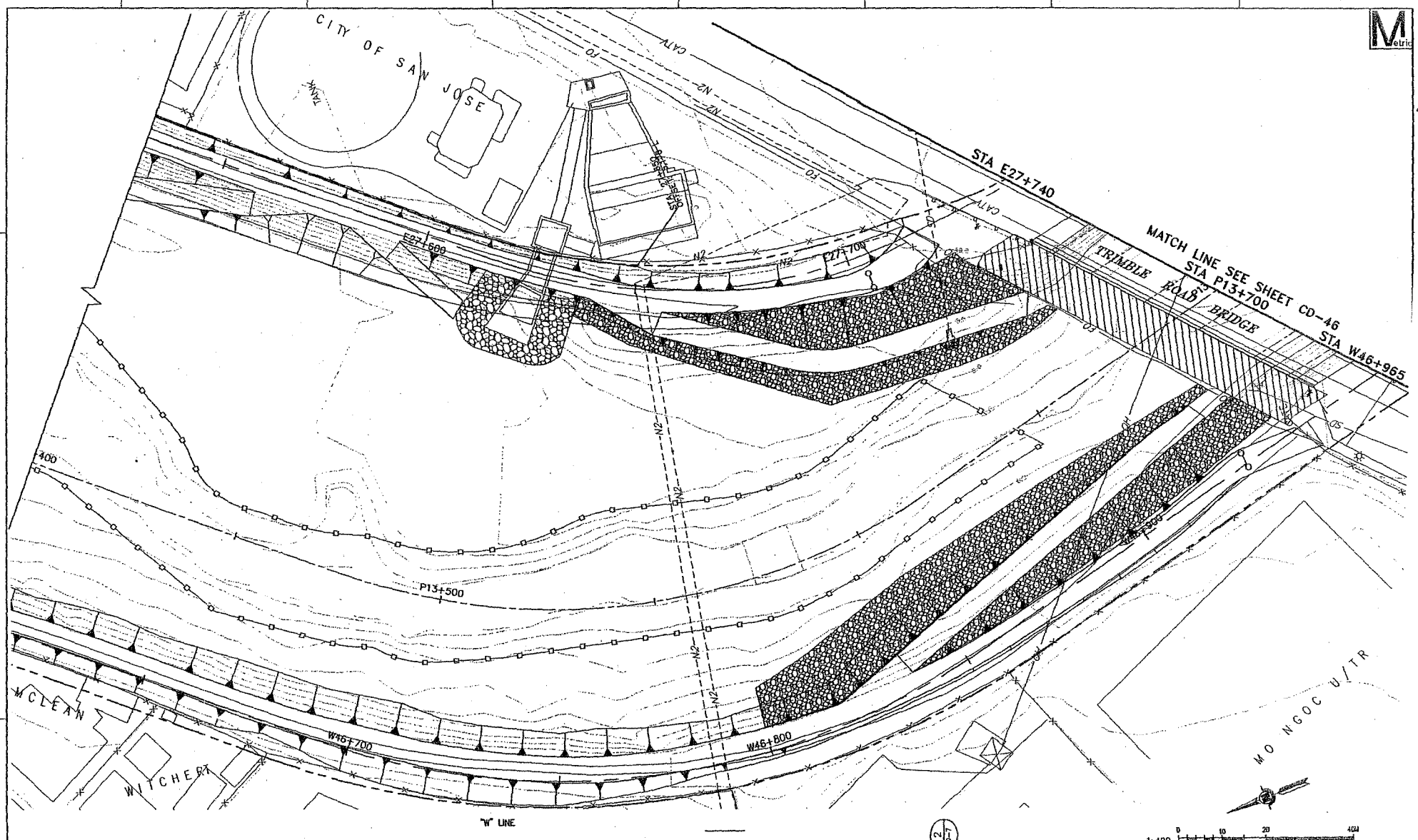
123 OF



REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES
FOR UTILITY INFORMATION, SEE "C" SHEETS.

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(408)436-4909

RCE C59330
EXP. 06/30/03
Civil
STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	B.W.
DRAWN	J.A.M./S.N.I.
CHECKED	E.E.G.

Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
TRIMBLE ROAD BRIDGE

VERIFY SCALES
0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING
IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN
SHEET
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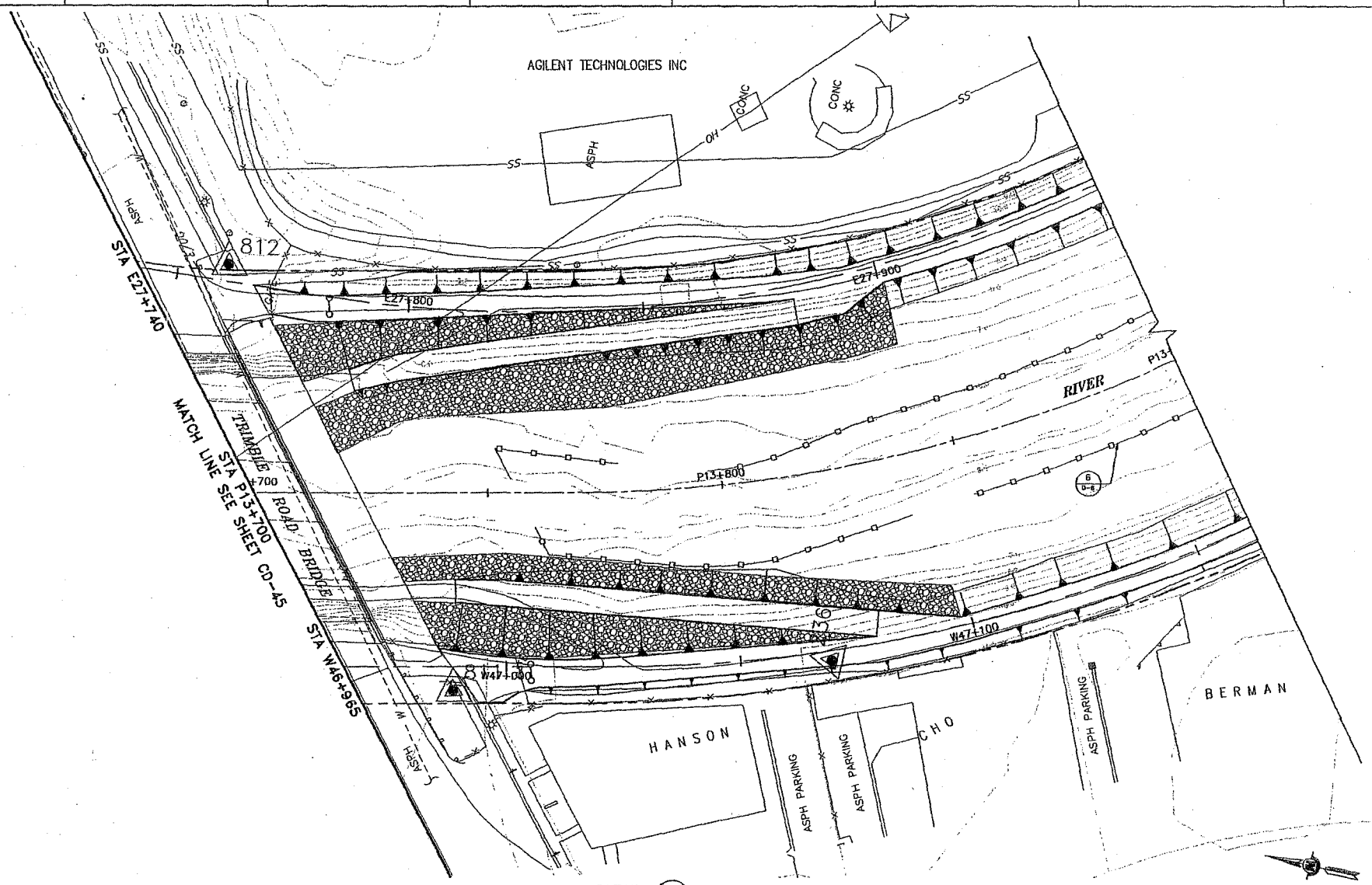
142 OF



DETAIL 1 (CD-46) PLAN

SCALE: 1:400

REV	DESCRIPTION	DATE	APPR	REFERENCE INFORMATION AND NOTES
				FOR UTILITY INFORMATION, SEE "C" SHEETS.

CH2MHILL
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SAN JOSE, CALIFORNIA 95112-4524
(408)436-4909

REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA — RCE C58333 EXP. 06/30/03

DATE	06/05/02
DESIGN	B.W.
DRAWN	J.A.M./S.N.L.
CHECKED	E.E.G.

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

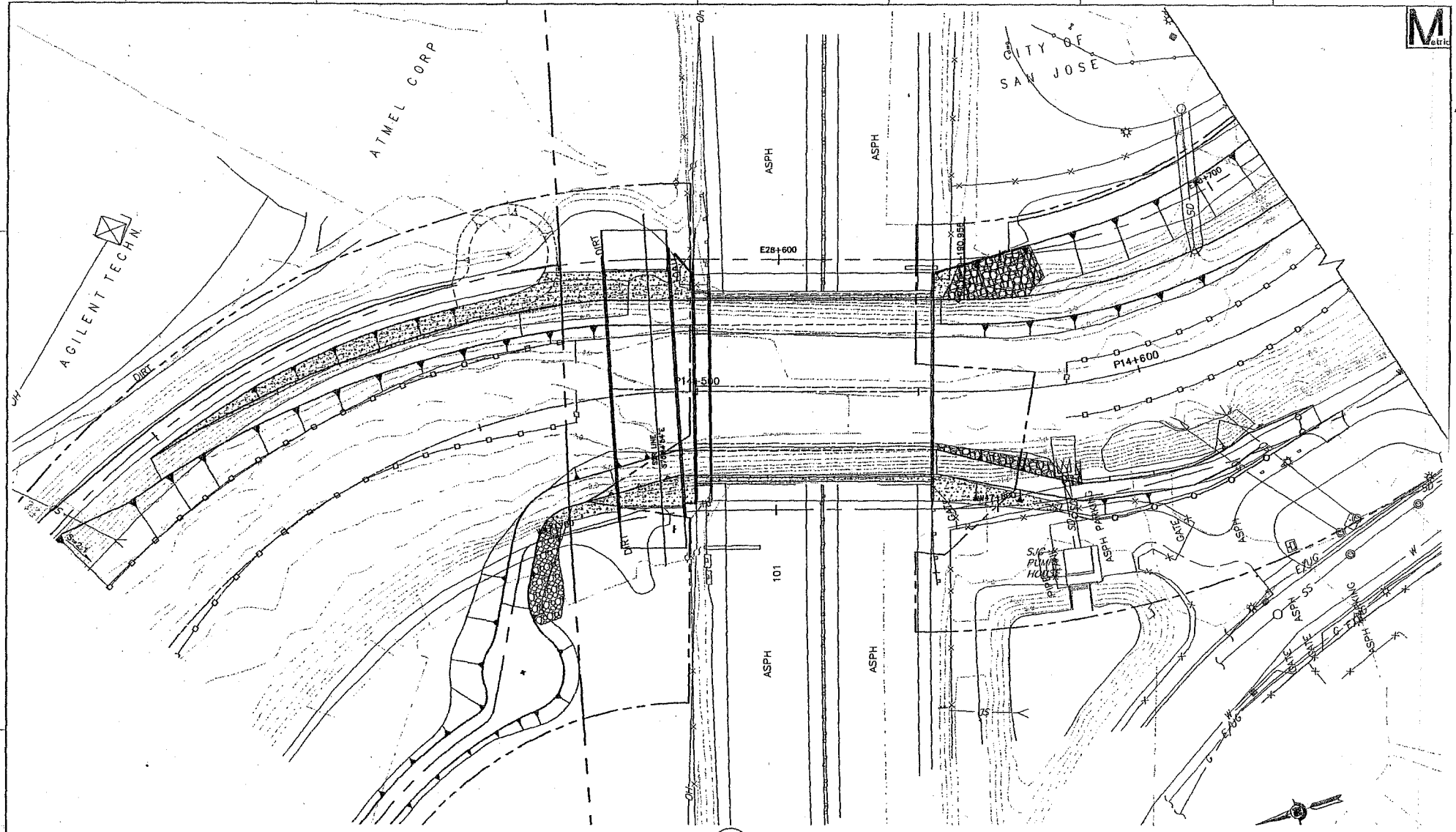
PLAN
TRIMBLE ROAD BRIDGE

VERIFY SCALES 0 25

BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN

SHEET CD-1 143 OF



REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES
FOR UTILITY INFORMATION, SEE "C" SHEETS.

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DAVID BRIAN VAN DAMEN
No. 25428
EXP. 03/31/04
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	W.S.B.
DRAWN	J.A.H./S.N.I.
CHECKED	E.E.G.

Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
US HIGHWAY 101 BRIDGE

VERIFY SCALES
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BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

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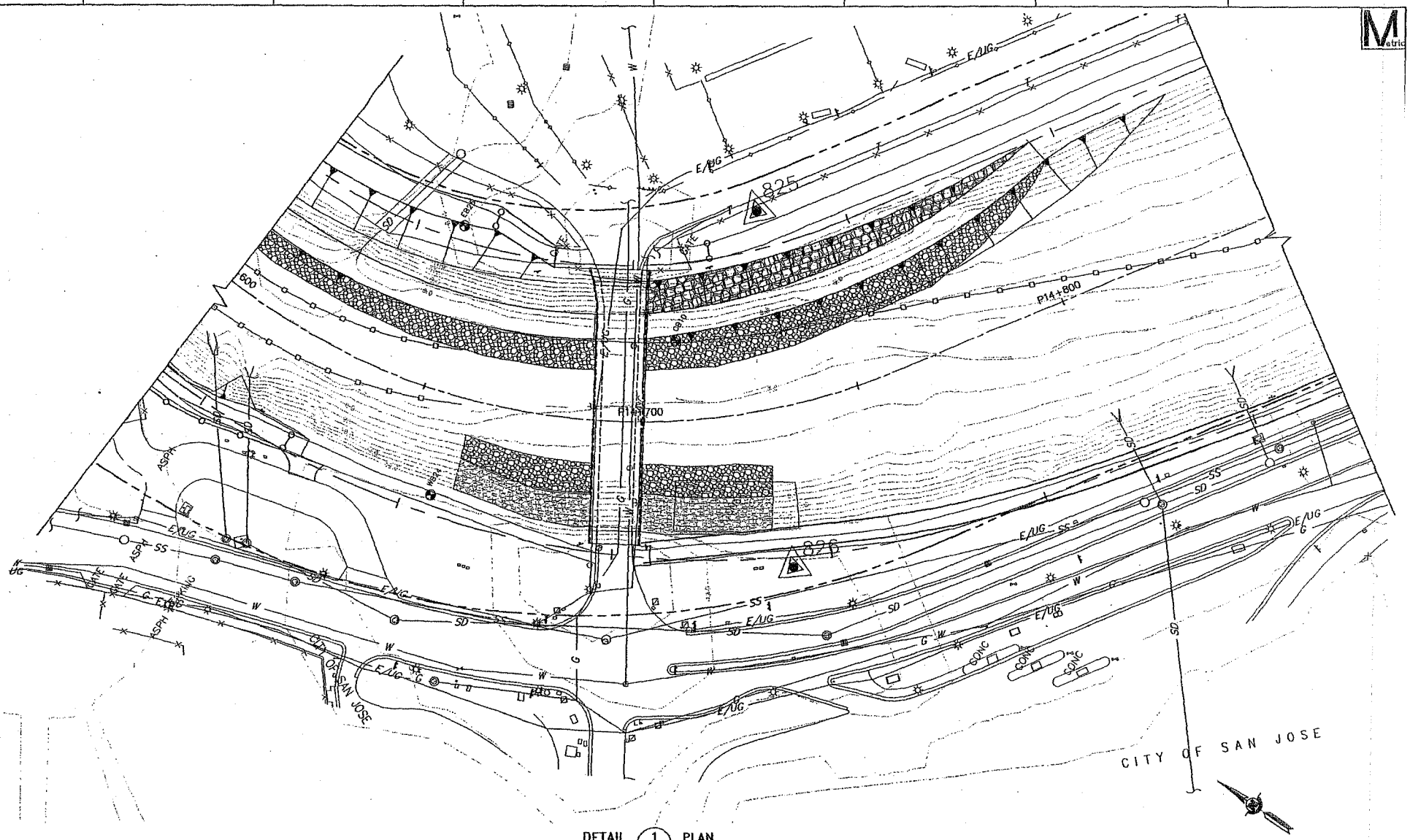
149 OF 40



DETAIL 1 / CD-66 PLAN

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REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

FOR UTILITY INFORMATION, SEE "C" SHEETS.

CH2MHILL

1737 NORTH FIRST STREET, SUITE 300
SAN JOSE, CALIFORNIA 95112-4524
(408)436-4909

REGISTERED PROFESSIONAL ENGINEER — Steve Michael Van Hoesen — RCE 28428 EXP. 03/31/04 — CIVIL — STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	W.S.B.
DRAWN	J.A.W./S.N.I
CHECKED	E.E.G.

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
AIRPORT ISLAND BRIDGE

VERIFY SCALES 0 25

BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

SCALE AS SHOWN

SHEET CD-6

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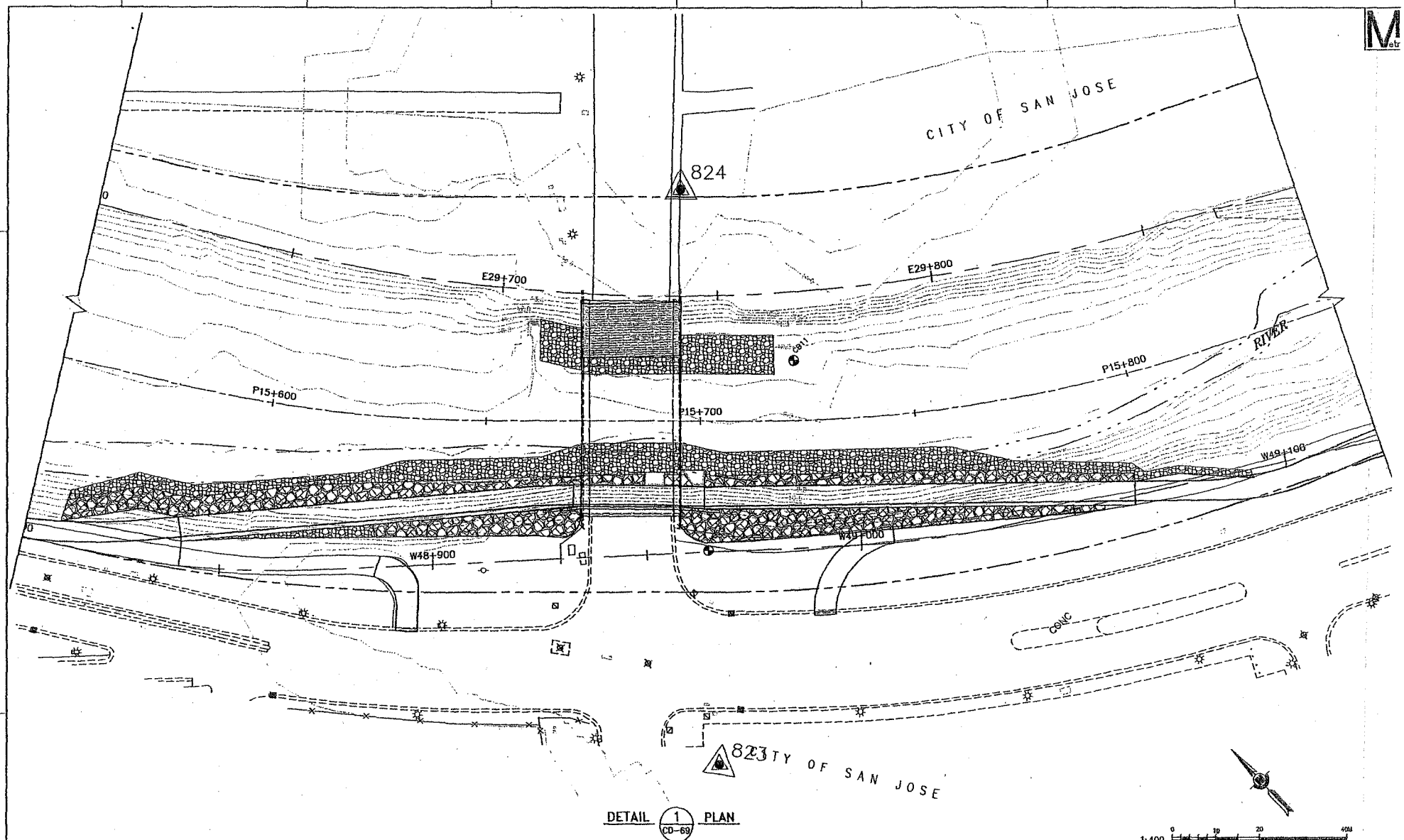

DETAIL 1 CD-69 PLAN

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REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

FOR UTILITY INFORMATION, SEE "C" SHEETS.

CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
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(408)436-4909

REGISTERED PROFESSIONAL ENGINEER David Michael Von Raesfeld RCE 26428 EXP. 03/31/04 CIVIL STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	L.E.F.
DRAWN	J.A.M./S.N.L.
CHECKED	E.E.G.

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

DATE

SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN AIRPORT PARKWAY BRIDGE

VERIFY SCALES 0 25

BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

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SHEET 27 OF 31

REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES

1. SEE "C" SHEETS FOR UTILITIES.
2. SEE SHEET X-5 & X-6 FOR CROSS SECTIONS.
3. SEE SHEET G-3 FOR R/W & EASEMENTS.
4. SEE OTHER CONTRACT DOCUMENTS FOR SPECIFICATIONS ON MATERIALS AND OPERATIONS.

CH2MHILL
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ALI S. YAZD
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EXP 06/30/04
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

DATE 06/06/02
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DRAWN A.A.V.
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Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
WEST LEVEE OVERFLOW WEIR

VERIFY SCALES 0 25
BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

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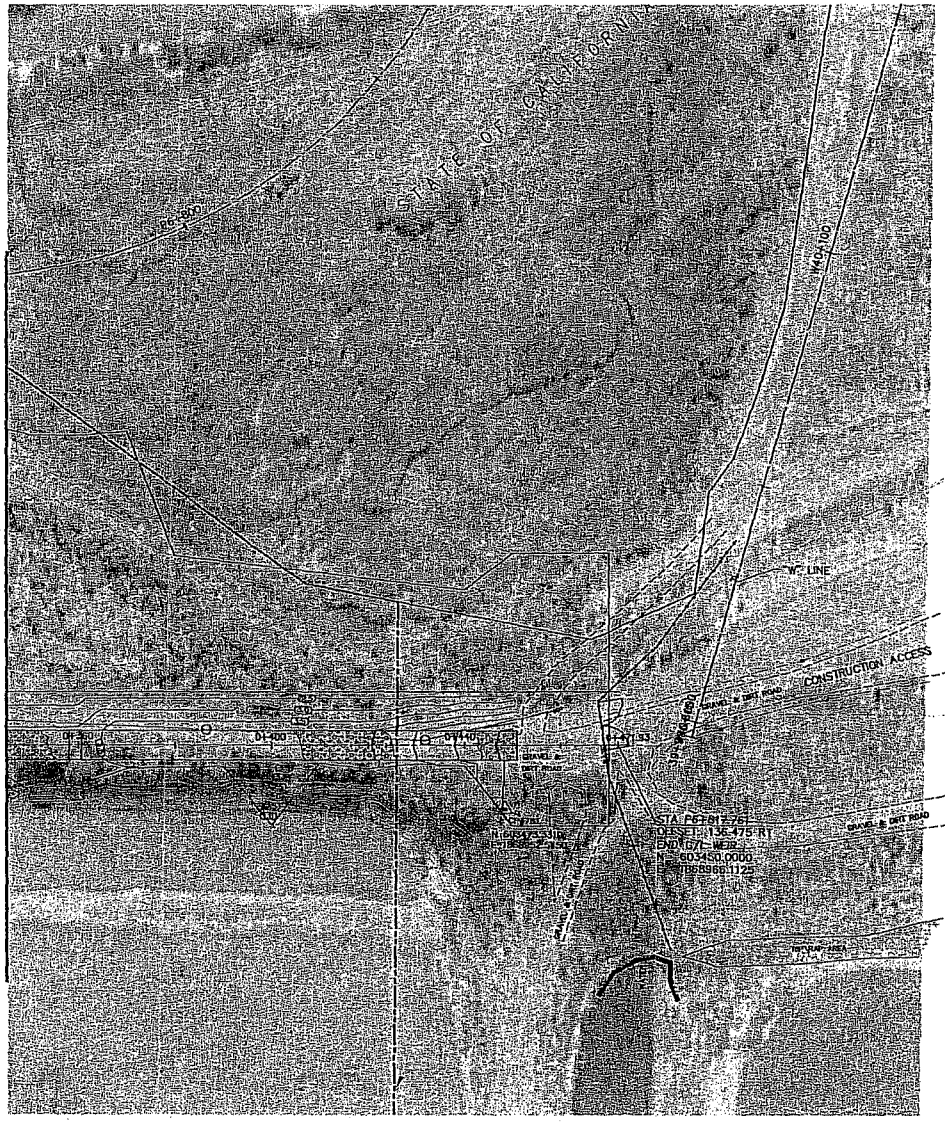

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2. SEE SHEET X-5 & X-6 FOR CROSS SECTIONS.
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CH2MHILL
1737 NORTH FIRST STREET, SUITE 300
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(408)436-4909

REGISTERED PROFESSIONAL ENGINEER
ALI S. YAZD
No. 63028
EXP 06/30/03
CIVIL
STATE OF CALIFORNIA

DATE 05/06/02
DESIGN A.S.Y.
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Santa Clara Valley Water District

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SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PLAN
ALVISO WEIR LOCATION

VERIFY SCALES
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BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ABJUST SCALES ACCORDINGLY

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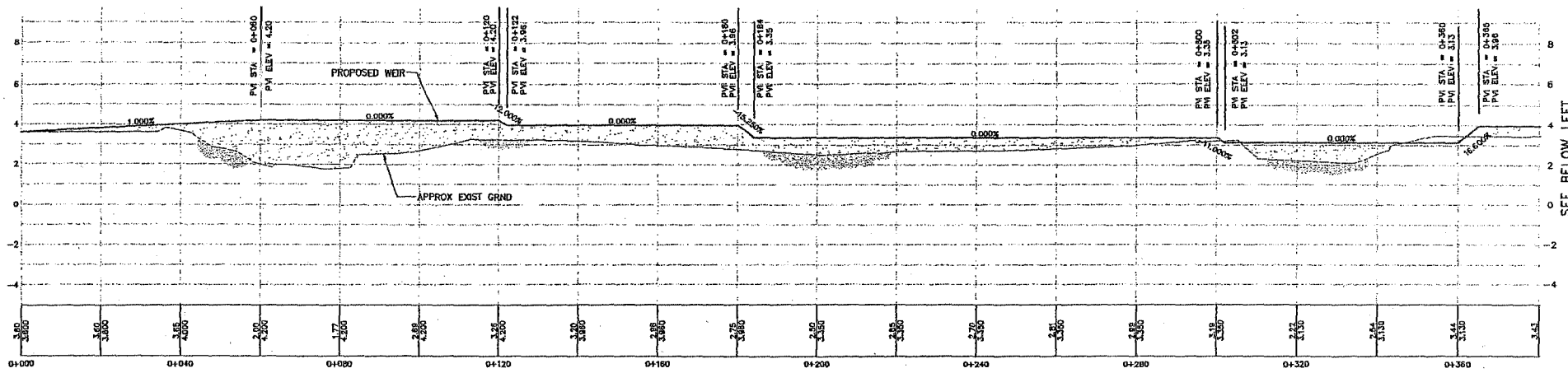
99 OF 4(



PROFILE ALONG WEST LEVEE OVERFLOW WEIR

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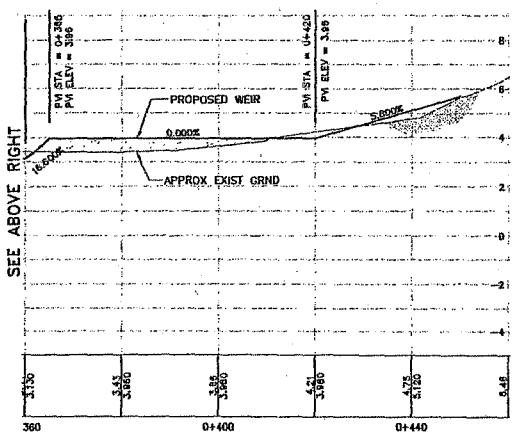
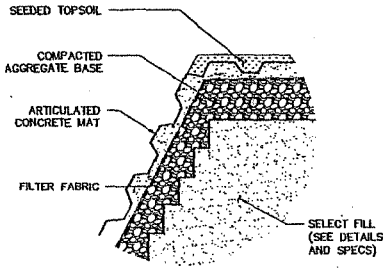
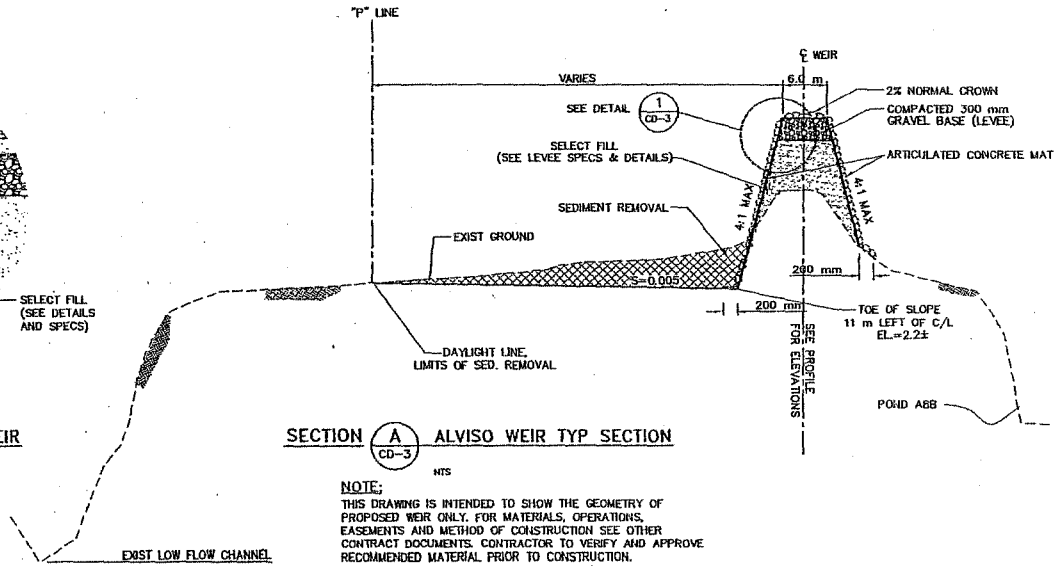




DETAIL (1 / CD-3) ALVISO WEIR

NTS



SECTION (A / CD-3) ALVISO WEIR TYP SECTION

NTS

NOTE:
THIS DRAWING IS INTENDED TO SHOW THE GEOMETRY OF PROPOSED WEIR ONLY. FOR MATERIALS, OPERATIONS, EASEMENTS AND METHOD OF CONSTRUCTION SEE OTHER CONTRACT DOCUMENTS. CONTRACTOR TO VERIFY AND APPROVE RECOMMENDED MATERIAL PRIOR TO CONSTRUCTION.

REV	DESCRIPTION	DATE	APPR

REFERENCE INFORMATION AND NOTES
1. SEE "C" SHEETS FOR UTILITIES.
2. SEE SHEET X-5 & X-6 FOR CROSS SECTIONS.
3. SEE SHEET G-3 FOR R/W & EASEMENTS.
4. SEE OTHER CONTRACT DOCUMENTS FOR SPECIFICATIONS ON MATERIALS AND OPERATIONS.

CH2MHILL
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SAN JOSE, CALIFORNIA 95112-4524
(408)436-4909

ALI S. YAZDI
RCE 62939
EXP 06/30/04
CIVIL
STATE OF CALIFORNIA

DATE	06/06/02
DESIGN	A.S.Y.
DRAWN	A.A.V.
CHECKED	E.E.G.

Santa Clara Valley Water District
ACCEPTED BY DISTRICT
DATE
SENIOR PROJECT MANAGER

LOWER GUADALUPE RIVER FLOOD PROTECTION PROJECT

PROFILE AND TYPICAL SECTIONS ALONG WEST LEVEE OVERFLOW WEIR

VERIFY SCALES
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BAR IS 25 MILLIMETERS ON ORIGINAL DRAWING IF NOT ADJUST SCALES ACCORDINGLY

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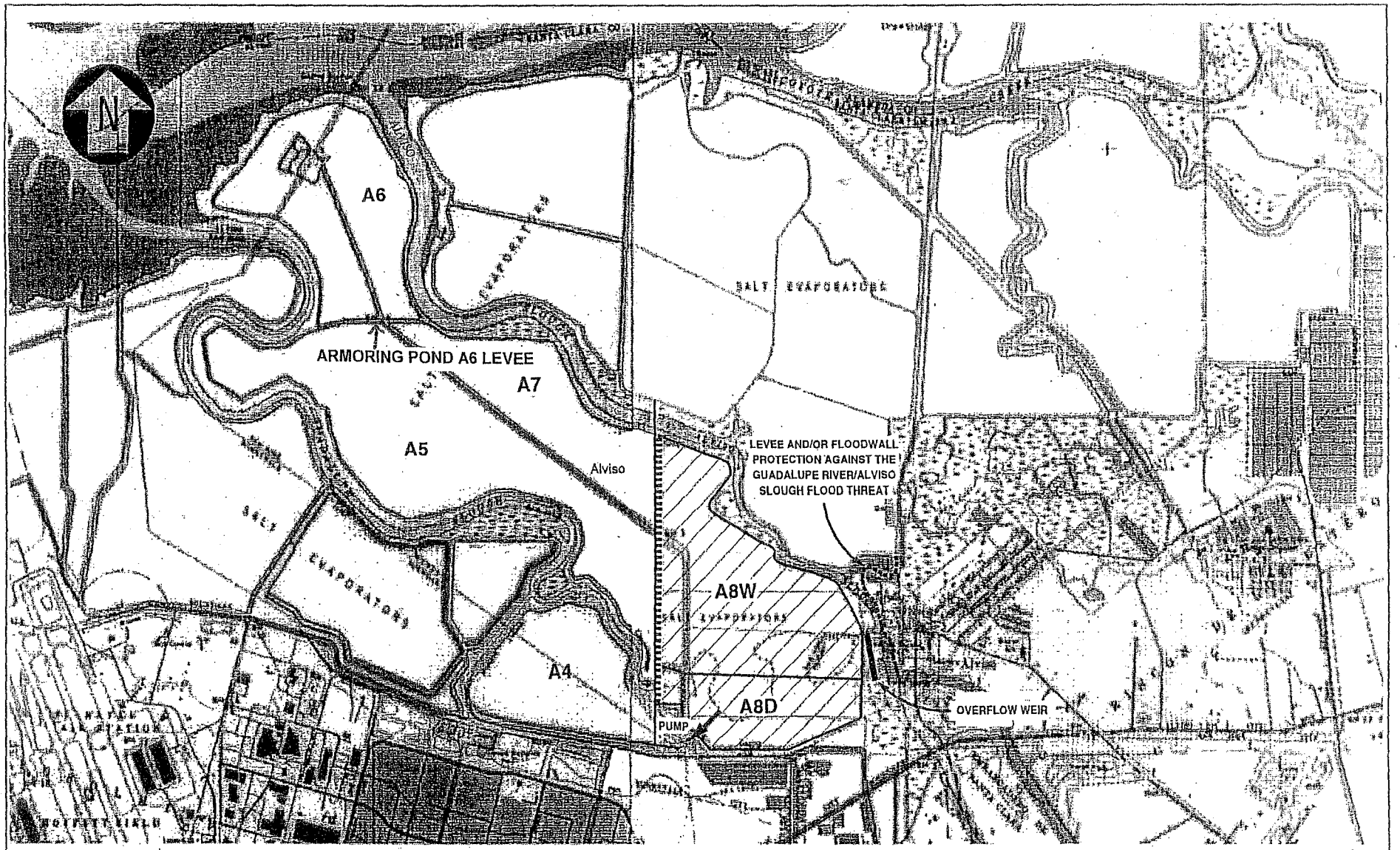

Conceptual Baylands Improvements, UPRR to the Bay

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

APR 17 2003

In reply please refer to
151422SWR01SR891:ES

LTC Michael McCormick, District Engineer
U.S. Department of the Army
San Francisco District, Corps of Engineers
333 Market Street
San Francisco, California, 94105-2197

Dear Lieutenant Colonel McCormick:

This document transmits the National Marine Fisheries Service's (NOAA Fisheries) Biological Opinion (Opinion) regarding the U.S. Army Corps of Engineers' (Corps) proposed issuance of a permit for the Santa Clara Valley Water District's (District) construction and operation of the Lower Guadalupe River Flood Protection Project on the Guadalupe River in Santa Clara County, California (Corps file #24897S) (Enclosure 1). This Opinion responds to your request of August 29, 2002, for consultation regarding the effects of the project on threatened Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*, 62 FR 43937), in accordance with section 7 of the Endangered Species Act (16 U.S.C. 1531 et seq.). The Corps is proposing to authorize the project under section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act of 1899.

In addition, this letter transmits NOAA Fisheries' Essential Fish Habitat (EFH) Conservation Recommendations pursuant to section 305(b)4(A) of the Magnuson-Stevens Fisheries Conservation and Management Act as amended (16 U.S.C. 1801 et seq.) (Enclosure 2). These EFH Conservation Recommendations are based on an analysis of the project on the EFH of species federally managed under the Pacific Coast Salmon Fishery Management Plan.

Endangered Species Act Consultation

Based on the best available information, NOAA Fisheries has concluded that the proposed project construction and operation is not likely to jeopardize the continued existence of CCC steelhead. However, NOAA Fisheries has determined that a small number of listed juvenile steelhead are likely to be harmed by the construction and operation of the project. The enclosed Opinion evaluates these potential impacts. Because NOAA Fisheries anticipates that incidental take will occur, an Incidental Take Statement is attached to the Opinion.

The Incidental Take Statement includes several Reasonable and Prudent Measures to minimize the impact of the anticipated incidental take of listed steelhead resulting from construction and operation activities.

Essential Fish Habitat Consultation

NOAA Fisheries concludes that the Lower Guadalupe River Flood Protection Project will adversely affect the EFH of various life stages of Pacific Coast salmon. As a result of these adverse effects, NOAA Fisheries is required to provide EFH Conservation Recommendations. All of the Reasonable and Prudent Measures and certain of the terms and conditions contained in the Incidental Take Statement of the enclosed Opinion for listed CCC steelhead are applicable to Pacific Coast salmon EFH and are therefore incorporated as EFH Conservation Recommendations. Additional Conservation Recommendations to protect Pacific Coast salmon EFH are also included.

Please note that as lead Federal agency, the Corps is required to provide a detailed written response to the EFH Conservation Recommendations provided by NOAA Fisheries within 30 days (Magnuson-Stevens Act (§305(b)(4)(B) and 50 CFR 600.920 (k)). The response must include a description of measures adopted by the Corps for avoiding, mitigating, or offsetting the impact of the project on EFH. In the case of a response that is inconsistent with the EFH Recommendations, the response must explain the reasons for not following the recommendations, including a scientific justification for any disagreement with the agency over the anticipated effects of the proposed action and the measures needed to avoid, mitigate, or offset such effects.

If you have questions regarding this consultation or the enclosed Opinion, please contact Erik Schmidt at 707-575-6083.

Sincerely,

Rodney R. McInnis
Acting Regional Administrator

Enclosures (2)

cc: Jim Lecky, NMFS-Long Beach
Kristine Atkinson, CDFG-Santa Cruz
Paul Amato, SFBRWQCB
Dennis Cheong, Santa Clara Valley Water District

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Enclosure 1

Endangered Species Act
Section 7 Consultation

BIOLOGICAL OPINION

On the Lower Guadalupe River Flood Protection Project
in Santa Clara County, California

Lead Agency:	U.S. Army Corps of Engineers
Activity:	Lower Guadalupe River Flood Protection Project
Consultation Conducted by:	National Marine Fisheries Service, Southwest Region
Date Issued:	
Refer to:	151422SWR01SR891

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COURT CLERK
CLERK OF THE COURT

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INTRODUCTION AND CONSULTATION HISTORY

This document transmits the National Marine Fisheries Service's (NOAA Fisheries) biological opinion for the Santa Clara Valley Water District's (District) Lower Guadalupe River Flood Protection project (LGRP).

This biological opinion is based primarily on information provided in the following documents:

1. Corps public notice #24897S, September 6, 2002.
2. Final Biological Assessment of Steelhead and Chinook Salmon for the Lower Guadalupe Flood Protection Project, prepared by Jones and Stokes, June 2002.
3. Engineer's Report, Lower Guadalupe River Planning Study, prepared by Santa Clara Valley Water District, June 6, 2002.
4. Final Environmental Impact Report, prepared by Santa Clara Valley Water District, June 6, 2002.
5. Draft Lower Guadalupe River Flood Protection Project Mitigation and Monitoring Plan, June 14, 2002.

The proposed LGRP was preceded by two other flood control projects on the Guadalupe River, both of which involved Endangered Species Act (ESA) section 7 consultations with the Corps of Engineers (Corps). On April 18, 2000, NOAA Fisheries concluded consultation and issued a biological opinion to the Corps for the Upper Guadalupe River Flood Control project, and on August 11, 2000, consultation was concluded and a biological opinion issued to the Corps for the Guadalupe River project (Downtown). The District presented its plans and schedule for the LGRP to NOAA Fisheries on May 18, 2001, and issued a Draft Environmental Impact Report (DEIR) and Draft Engineer's Report in August 2001. NOAA Fisheries provided written comments on the DEIR to the District on October 12, 2001, and joined other regulatory and resource management agencies at a site visit and briefing on the LGRP's environmental planning status on December 19, 2001. The District hosted a second interagency review of the LGRP's environmental planning status on March 4, 2002, and distributed an administrative draft of the Final EIR (FEIR) for agency review on April 24, 2002. NOAA Fisheries provided written comments to the District on this document on May 21, 2002, primarily concerning construction timing, herbicide use, possible levee setbacks and monitoring. NOAA Fisheries staff joined District staff and consultants for a phone conference regarding these written comments on June 5, 2002.

The following day, June 6, 2002, the District issued its FEIR and final Engineer's Report, followed by issuance of the draft LGRP Mitigation and Monitoring Plan (MMP) on June 14, 2002, and the final Biological Assessment (BA) of Steelhead and Chinook Salmon for the LGRP on June 28, 2002. NOAA Fisheries provided written comments to the District on the draft MMP on July 19, 2002, concerning monitoring of the Alviso weir, herbicide use and sediment removal overflow channels. NOAA Fisheries staff joined District staff and consultants for a phone conference concerning these comments on July 25, 2002. Written comments on the final BA were provided by NOAA Fisheries to the District on August 21, 2002, and a phone conference was held concerning those comments on September 9, 2002.

On August 29, 2002, the Corps initiated formal consultation for the LGRP with NOAA Fisheries. Through interagency coordination during the first three quarters of 2002 and early 2003, the information needed to proceed with this consultation was provided to NOAA Fisheries, or was otherwise accessible for consideration and reference. A complete administrative record of this consultation is on file in the NOAA Fisheries Santa Rosa Office, Santa Rosa, California.

DESCRIPTION OF PROPOSED ACTION

The Corps proposes to permit the District to complete a variety of flood protection activities along the lower 6.5 miles of the Guadalupe River, in Santa Clara County, California. The Corps is proposing to permit this work under Section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act of 1899. Work is scheduled to occur from 2002 to 2005 (District 2002a). Work within the Guadalupe River channel is scheduled to begin in the summer of 2003.

High flood flows occurred on the Guadalupe River in 1955, 1958, 1980, 1982, 1986, 1995 and 1998. The combination of high flow events with historic and ongoing urban development of the natural floodplain has resulted in recurring flood damage to an area of up to 5,200 acres in the Cities of San Jose and Santa Clara, the community of Alviso and the Alviso Slough salt ponds. In 1963, the lower Guadalupe River channel was straightened and confined within levees by the District, with a design flood capacity of 12,000 cubic feet per second (cfs). In 1983, additional flood control modifications were made to the lower Guadalupe River by the Corps, increasing the flood conveyance capacity to 17,000 cfs. However, flooding continued to occur. Hydraulic analysis of storm events on the river in January and March 1995 (20-year and 35-year flood events, respectively) showed that the 1983 design capacity had been significantly reduced by sediment deposition and vegetation growth (District 2002b). To address the ongoing flooding threat and provide protection from future high water events expected to occur on the full length of the Guadalupe River, the District and the Corps planned a series of three contiguous flood control projects: the Upper Guadalupe project and Downtown Guadalupe project, both of which are already under construction, and the LGRP.

In 1992, the District signed an agreement with the Corps under which the District will restore the Lower Guadalupe River's 1983 flood control design flow and meet the design flood capacity of the Corps' Downtown Guadalupe project upon the Downtown project's scheduled completion in 2004. Construction and regular maintenance of the proposed LGRP will achieve the flood capacity of 18,350 cfs required by the District's agreement with the Corps, providing protection from a 100-year storm event on the Guadalupe River.

The proposed LGRP project will modify previous flood control projects initiated on the Guadalupe River in 1982 and 1995, in order to provide flood protection for urbanized and other developed areas along 6.5 miles of the river from I-880 downstream to the Alviso Slough Baylands. The project is designed to achieve a flood conveyance capacity of 18,350 cfs through a combination of improved levees and floodwalls, sediment and vegetation removal, streambank stabilization, replacement of the Highway 237 bridge, construction of a weir to operate during

flood events at Alviso Slough, installation of grade control structures, and other measures. For project planning purposes, the District has divided the LGRP into eight reaches. The following work is proposed in these reaches (upstream to downstream):

Reach A: I-880 to Highway 101

Modification of the Guadalupe River streambank and removal of riparian vegetation will occur approximately 300 feet upstream and downstream of the I-880 bridge overcrossing. Excluding existing riparian mitigation planting areas managed by the Corps and California Department of Transportation (Caltrans) and a 15-foot riparian buffer on each side of the low-flow channel, sediment and riparian vegetation will be removed from the channel on a continuing basis. Up to six grade-control structures (vortex rock weirs) will be constructed in the low-flow channel downstream of I-880. Construction of each grade-control structure will require cofferdams and dewatering of the work area. An additional grade-control weir is proposed to be built at the Highway 101 bridge. Floodwalls 1.8 feet in height and 98 feet in length on the west bank and 79 feet in length on the east bank will be constructed upstream of Highway 101. An existing maintenance road on the west bank will be widened to 18 feet, with underpasses constructed at the Skyport Drive, Airport Parkway and Highway 101 bridges. The east bank will be excavated at a 2:1 slope to create an 18 foot access road on the bank top, with underpasses constructed at the Airport Parkway and Highway 101 bridges. Armoring to provide protection from scour will be installed on the stream banks under the Highway 101, Airport Island, Airport Parkway and Skyport Drive bridges. Armoring methods will consist of rock slope protection, vegetated to the fullest extent practical, keyed into the stream channel bottom and extending up the bank to the 25-year flood level or greater. Wire mesh gabion baskets, if necessary, will be used only above this level with the exception of approximately 25 linear meters at the Airport Parkway bridge and five linear meters at the Highway 101 bridge. At these two sites for a total length of 30 linear meters, gabions will be installed between the 25-year flood level and the ordinary high water mark.

Reach B: Highway 101 to Trimble Road

Levees on both banks will be widened to 18 feet and raised approximately one foot in several locations, with underpasses constructed at the Trimble Road bridge. Excluding a 19.7-foot riparian buffer on each side of the low-flow channel, sediment and riparian vegetation will be removed from the channel on a continuing basis. Approximately 820 feet of bank on both sides of the channel will be armored to provide protection from scour. Rock rip rap extending approximately 394 feet will be placed above and below maintenance ramps on both banks upstream of Trimble Road. Approximately 508 feet of rock rip rap and 423 feet of concrete paving will be placed on the east bank downstream of Highway 101 while 262 feet of rock rip rap and 105 feet of concrete paving will be placed on the west bank downstream of Highway 101. A grade-control structure will be constructed at the Trimble Road bridge, and armoring installed on the stream banks under the bridge. Five outfalls will be protected with rock rip rap. Approximately 355 feet of riparian mitigation planting will be completed along the west bank.

Reach C: Trimble Road to Montague Expressway

Levees on both banks will be raised approximately 1.6 feet. Access roads on both banks will be widened to 18 feet, with an underpass constructed at Montague Expressway. Excluding a 19.7-

foot low-flow riparian buffer on each side of the low-flow channel, sediment and mature riparian vegetation will be removed on a continuing basis from a 100-foot wide section of the channel. A grade-control structure will be constructed at the Montague Expressway bridge, and armoring installed on the stream banks under the bridge. Five outfalls will be protected with rock rip rap and two outfalls extended.

Reach D: Montague Expressway to Hetch Hetchy Aqueduct

Levees on both banks will be raised by approximately 2.3 feet. Access roads on both banks will be widened to 18 feet and two access ramps reconstructed downstream of Montague Expressway. Outside a 50- to 75-foot riparian buffer on each side of the low-flow channel, vegetation will be removed on a continuing basis and two, 35-foot overflow channels excavated to remove accumulated sediment. Three stormwater outfalls will be modified and two protected with rock rip rap.

Reach E: Hetch Hetchy Aqueduct to Tasman Drive

Levees on both banks will be raised by approximately 1.6 feet. Access roads on both banks will be widened to 18 feet. Outside a 50- to 75-foot riparian buffer on each side of the low-flow channel, vegetation will be removed on a continuing basis and two, 35-foot overflow channels excavated to remove accumulated sediment. One outfall will be protected with rock rip rap.

Reach F: Tasman Drive to Highway 237

Levees on both banks will be raised by approximately 2.3 feet. Floodwalls approximately 2.6 to 3.3 feet in height will be constructed along approximately 2,000 feet of this reach upstream from Highway 237. Outside a 19.7-foot riparian buffer on each side of the low-flow channel, vegetation will be removed on a continuing basis. Three outfalls will be protected with rock rip rap.

The existing eastbound Highway 237 bridge will be demolished and replaced to match the existing westbound bridge height and profile. New bridge piers will be placed in the same location as existing piers. Temporary cofferdams and access roads will be required to facilitate construction of the piers and bridge.

Reach G: Highway 237 to the Union Pacific Railroad bridge in Alviso

Floodwalls approximately 3.9 feet in height will be constructed along 3,280 feet of this reach on the east bank and along 1,968 feet on the west bank. Outside a 19.7-foot riparian buffer on each side of the low-flow channel, vegetation will be removed on a continuing basis and sediment dredged to a depth of approximately 3.2 feet from a 37-foot wide area on each side of the channel. Access roads on both banks will be widened to 18 feet. Three new maintenance roads 21 feet in width, one on the west bank upstream of Gold Street and two on the east bank upstream and downstream of Gold Street, will be constructed. Three storm water outfalls will be protected with rock rip rap.

Alviso Baylands

An overflow weir approximately 1,000 feet in length, 50 feet in width and 10.3 to 13.8 feet in height will be constructed at a low spot in the levee dividing the Guadalupe River from an

existing salt production ponds (planned for interim and long-term habitat management and restoration by the U.S. Fish and Wildlife Service) in the Alviso Baylands area. The weir is designed to begin to pass water over the top into the salt pond at flows of 6,800 cfs (roughly a five-year flood event). By removing flows in excess of 6,800 cfs at the weir, floodwaters should not overtop the levee at other locations. By managing floodwaters at the weir, the project is designed to avoid potential levee failure and relieve potential flooding in the community of Alviso directly across the channel from the planned weir site. Floodwaters flowing over the weir will be deposited initially into pond A8W and will eventually flow into ponds A5, A6, A7 and A8D.

At ponds A5, A6, A7, A8W and A8D floodwaters will be removed with 50 cfs pumps in order to draw down raised pond depths to pre-flood conditions. Additional pumping may occur at ponds A6 and A8D to meet specific habitat management goals at those sites. Reinforcement of the existing weir separating ponds A5 and A7 from A6 is also proposed, with articulated concrete mats installed to prevent levee overtopping and potential failure during high water events.

On the east bank of Alviso Slough, across from the weir location (Union Pacific railroad bridge to the planned Santa Clara County Marina entrance), the levee will be raised by up to 2.3 feet. On the east side of the channel, outside a 20-foot riparian buffer on each side of the low-flow channel, vegetation will be removed mechanically and with herbicides for approximately 738 feet downstream from the Union Pacific railroad bridge. Sediment approximately 3.3 feet in depth will be dredged from the channel in this same area.

Vegetation and sediment removal summary for all reaches

Sediment will be removed periodically in Reaches B through G and in the Alviso Slough area using shallow dredging methods. A total of 15,000 to 17,000 tons of sediment, up to a depth of approximately 3.3 feet, is proposed for removal each year. In addition to sediment removal, vegetation will be removed throughout all project reaches to achieve and maintain the desired channel capacity. The areal extent of vegetation that will be affected under this program is as follows: 4.13 acres of riparian vegetation outside the proposed low-flow buffer zones; 46.62 acres of wetland vegetation and other waters of the U.S.; 73.72 acres of ruderal vegetation; and 104 linear feet of shaded riparian aquatic vegetation (District 2002a). Under the proposed project, the District will attempt to balance its flood conveyance goals, which require vegetation removal, with the desire to maintain and enhance ecological functions and values in the lower Guadalupe River (District 2002d).

Woody and herbaceous vegetation will be removed or cut to a height of less than one foot from all reaches during the summer and fall months, using a combination of mechanical cutting and spraying with the herbicide Aquamaster.

Measures to minimize and mitigate construction impacts

The project proposal includes a number of measures to protect environmental quality and/or reduce environmental impacts from flood protection activities, and that avoid and minimize construction-related impacts. The following measures are specific to the protection of steelhead, steelhead habitat, and water quality:

1. In order to avoid the primary migration and spawning periods of steelhead, all work below the top of bank ("in-channel construction") will occur between May 1 and October 15. Since outmigrating juvenile steelhead may still be present in the river during the initial part of this work window, construction activity can proceed in the month of May only if average daily stream temperatures at a location to be approved of by NOAA Fisheries have exceeded 68°F for at least five consecutive days. Any construction that does occur prior to June 1 will not involve dewatering, flow diversion, or work within the wetted stream. Cofferdam construction associated with in-channel work occurring between September 1 and October 15 will provide uninterrupted upstream passage around construction sites and dewatered areas. Specific stream monitoring methods and reporting requirements will be coordinated with NOAA Fisheries and the California Department of Fish and Game (DFG). Revegetation work is not confined to the May 1-October 15 work window.

2. The District will implement a Construction Area Fish Management Program to protect steelhead and steelhead habitat during stream diversion and dewatering activities. As part of this program, a qualified fisheries biologist shall survey each project reach for steelhead presence prior to the start of the diversion and dewatering process. Flow diversion at sites to be dewatered will begin at the upstream cofferdam and proceed incrementally in order to allow fish in the affected area to move downstream. Sufficient gravity flow will be maintained through bypass channels, culverts or siphons to allow unimpeded downstream passage of juvenile steelhead, including smolts. Adequate fish passage conditions will be met by avoiding the creation of vertical drops in excess of six inches, and maintaining contiguous flows and water velocities no greater than eight feet per second and water depths no less than one foot. Where gravity flow is not possible, pumps used for diversion will be screened to meet NOAA Fisheries' Fish Screen Criteria for Anadromous Salmonids, and operated only between June 15 and September 1.

   Fish and other aquatic vertebrates will be collected from the area being dewatered and relocated to a safe location above or below the work site. If necessary, steelhead will be captured and relocated from the work site to a flowing segment of the river nearby. Protocol for capture and release of steelhead will be developed in cooperation with NOAA Fisheries and DFG. Both agencies will be notified immediately if any salmonids are found or caused to be injured or killed (except for spawned-out adult chinook salmon).

3. A riparian vegetation buffer varying from 15 to 75 feet in width will be preserved along each side of the stream's low-flow channel in all reaches of the project. This buffer is intended to protect habitat values for salmonids including shade and cover from predators and to filter sediment that affects water quality. Within and between the buffer areas, neither vegetation nor sediment will be removed at any

time during project construction or maintenance except for the removal of exotic vegetation.

4. Contractors shall be required to develop and implement the following plans: a Vegetation Protection Plan to protect vegetation during construction and replace it if necessary; a Storm Water Pollution Prevention Plan as part of the National Pollution Discharge Elimination System (NPDES) General Construction Activity Storm Water Permit to minimize the potential for sediment input to the aquatic system and protect water quality and downstream habitats during and after construction; and a Toxic Materials Control and Spill Response Plan to regulate the use of hazardous materials, such as petroleum-based products used as fuel and lubricants for equipment as well as other potentially toxic materials associated with project construction.

5. Heavy equipment shall operate only within dewatered areas or outside the low-flow riparian vegetation buffer zone and the wetted channel.

6. District Best Management Practices (BMPs) will be fully implemented during construction activities, and include the following areas: scheduling, temporary stream crossings, preserving existing vegetation, dust control, construction road stabilization, stabilized construction entrances, and temporary drains and swales.

To compensate for the loss of riparian and wetland vegetation due to construction activities and vegetation and sediment management, the District will implement a mitigation program that takes into account the quality and type of habitat affected. This program will be coordinated with mitigation performed under the District's Stream Maintenance Program (SMP) and mitigation performed by the Corps and Caltrans as part of other construction projects (District 2002d). The mitigation plan will identify the location, quantity, size and type of mitigation planting areas; installation and maintenance techniques; and monitoring and reporting requirements.

Specifically, LGRP impacts to 46.62 acres of tidal and non-tidal wetland vegetation from levee construction and sediment and vegetation removal will be mitigated off site and out of kind, at a 2:1 ratio, in the District-owned pond A4, a 300-acre site to the south of Alviso Slough. Implementation is expected to begin in 2007. LGRP impacts to 4.13 acres of riparian vegetation from levee construction and sediment and vegetation removal will be mitigated on and off site and in kind, at a 3:1 ratio, in the channel bottom of Reaches A, B and C, and in the levee setback area of Reach B. Streamside mitigation in these areas would increase the functions and values of the existing habitat for aquatic species by providing overhead and instream SRA cover, and by improving the continuity of riparian habitat between the lower reaches of the Guadalupe River (Reaches C through G) and proposed mitigation areas associated with other flood protection projects further upstream on the Guadalupe River and on Guadalupe Creek.

Action area

The LGRP is located on the lowermost portion of the Guadalupe River in Santa Clara County,

California. For the purposes of this consultation, the action area encompasses the lower Guadalupe River and its associated riparian corridor extending to the right of way at the outside of each bank top, from the I-880 crossing to the mouth of the river at San Francisco Bay. The action area includes Alviso Slough and all adjacent salt ponds affected by operation of the LGRP.

STATUS OF THE SPECIES

This biological opinion analyzes the effects of the LGRP on threatened CCC steelhead. The action area does not include any designated critical habitat for listed anadromous salmonids, therefore, critical habitat will not be further considered in this opinion.

A. Listing Status

Central California Coast steelhead (*Oncorhynchus mykiss*) are listed as threatened under the ESA (August 18, 1997, 62 FR 43937). This ESU includes steelhead in coastal California streams from the Russian River to Aptos Creek, and the drainages of San Pablo and San Francisco bays.

B. Life history and biological requirements

Oncorhynchus mykiss exhibits one of the most complex suites of life history traits of any salmonid species (NMFS 1997a). As anadromous steelhead, juveniles of the species migrate from fresh water to the ocean and adults return to fresh water to spawn. Only the anadromous forms of CCC steelhead are listed as a threatened species. As rainbow trout, the species resides in fresh water throughout its lifetime. Typically, juvenile steelhead will spend one to three years rearing in fresh water before migrating to the ocean (Busby *et al.* 1996). Most steelhead will then spend two to three years in the ocean before returning to their natal streams to spawn. In contrast to other species of the *Oncorhynchus* genus, steelhead may spawn more than once before dying.

Winter steelhead enter rivers and streams in the late fall and winter months, when higher flows and associated lower water temperatures occur. Spawning takes place from December through April, peaking in January and February (Fukushima and Lesh 1998). Steelhead spawn in cool, clear streams featuring suitable water depth, gravel size, and current velocity. Intermittent streams may be used for spawning (Everest 1973; Barnhart 1986). The length of the incubation period for steelhead eggs is dependent on water temperature.

Fry emerge from the gravel, and rear along the stream margins, moving gradually into pools and riffles as they grow larger. Older fry establish and defend territories. The period of highest mortality for juvenile anadromous salmonids usually occurs in the first few months when newly emerged fry establish territories and the population achieves equilibrium with carrying capacity (Murphy and Meehan 1991). In-stream cover such as water depth and turbulence, overhanging riparian vegetation, undercut banks, woody debris, large-particle substrates and aquatic vegetation has been correlated with fish distribution and abundance (Bjornn and Reiser 1991).

In general, diverse stream habitats consisting of shallow riffles and pools with well-developed cover are important factors to maintaining optimal steelhead habitat (Leidy 2000b).

Environmental variables including water temperature, dissolved oxygen levels, and suspended and deposited fine sediments have important physiological and behavioral effects on steelhead during the freshwater rearing period. In many streams of the Central California coast, water temperatures during the summer rearing phase may be limiting for steelhead. Bjornn and Reiser (1991) report optimal temperatures for steelhead rearing range from 54°F to 64°F and an upper lethal temperature of approximately 77°F. Due to the need for cool temperatures, food supplies, relatively low turbidity and adequate dissolved oxygen levels, baseflows during summer and early fall are crucial to steelhead rearing success. In California, juveniles usually live in freshwater for two years (Barnhart 1986) – with a range of one to three years (Shapavalov and Taft 1954) – then smolt and migrate to the sea.

Most downstream smolt migration takes place between February and June. Fukushima and Lesh (1998) report the peak timing of steelhead smolt outmigration in Central California occurs in March, April and May, while Barnhart (1986) reports most steelhead smolts in California enter the sea in March and April. In creeks where the temperatures are higher and flow conditions lower, the duration of the smolt migration season may be compressed into a shorter period (Bill Cox, California Department of Fish and Game, pers. comm., October 2000). Smolt size varies both annually and according to age (Shapavalov and Taft 1954) , and is typically in the range of 130-250 mm (Moyle 1976); smolts that attain a relatively large size (150-250 mm) before migrating are less vulnerable to predation in the ocean (Meehan and Bjornn 1991).

C. Population trends

In the mid-1960s, 94,000 adult steelhead were estimated to spawn in the rivers of this ESU, including 50,000 fish in the Russian River and 19,000 fish in the San Lorenzo River (Busby *et al.* 1996). The Russian River, the largest watershed in the ESU, once boasted steelhead runs ranked as the third largest in California behind only the Klamath and Sacramento rivers. Difficulties in assessing current run sizes in both rivers include the inability to distinguish the relative proportions of hatchery and wild fish. Based on the best data available NOAA Fisheries has estimated that Russian River steelhead currently number about 7,000 fish, including hatchery fish which are currently not considered part of the listed population (Busby et al. 1996, NMFS 1997b). San Lorenzo River steelhead are thought to number approximately 1,000 to 2,500 fish (Alley 2000), including hatchery fish, which are considered part of the listed population in this river. These estimates suggest that total abundance in these two rivers has declined to less than 15 percent of their abundance in the 1960s.

Recent estimates for several other streams (Lagunitas Creek, Waddell Creek, Scott Creek, San Vincente Creek, Soquel Creek, and Aptos Creek) indicate individual run sizes of 500 fish or less. Steelhead in most tributaries to San Francisco and San Pablo bays have been virtually extirpated (McEwan and Jackson 1996). Fair to good runs of steelhead occur in coastal Marin County tributaries. In a 1994 to 1997 survey of 30 San Francisco Bay watersheds, steelhead occurred in small numbers at 41 percent of the sites, including the Guadalupe River, San Lorenzo Creek, and

Corte Madera Creek (Leidy 1997). Presence/absence data available since the proposed listing show that in a subset of streams sampled in the central California coast region, most contain steelhead. While there is uncertainty as to whether the steelhead observed were hatchery or wild fish, NMFS believes it is generally a positive indicator that there is a relatively broad distribution of steelhead in smaller streams throughout the ESU (NMFS 1997b).

Little information is available regarding the contribution of hatchery-produced fish to natural spawning of steelhead, and little information on present run sizes or trends for this ESU exists. However, given the substantial rates of declines for stocks where data do exist, the most recent status review update concluded that this ESU is likely to become endangered in the foreseeable future (NMFS 1997a). Additional historical and recent published steelhead abundance are summarized in NOAA Fisheries' west coast steelhead status review (Busby *et al.* 1996) and status review update (NMFS 1997a).

ENVIRONMENTAL BASELINE

The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat, and the ecosystem in the action area. The environmental baseline includes the past and present impacts of all federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process (50 CFR §402.02). The environmental baseline establishes the base condition for the natural resources, human usage, and species status in the action area which is used to evaluate the effects of the proposed action.

A. Environmental setting in the action area

The Guadalupe River basin is located at the southernmost end of San Francisco Bay, bounded by the Diablo Range to the east and the Santa Cruz Mountains to the west. The climate of the region is Mediterranean, with over 90 percent of annual precipitation occurring between November and April. The Guadalupe watershed is the second largest in the Santa Clara Basin, and drains an area of approximately 160 square miles, from the eastern ridgeline of the Santa Cruz Mountains to San Francisco Bay. Beginning where the confluence of Guadalupe and Alamitos Creeks forms Almaden Lake, the Guadalupe River flows north approximately 14 miles through urbanized portions of San Jose and Santa Clara, eventually discharging into the Bay through Alviso Slough. The Guadalupe River receives runoff from a steep upper watershed of forests and grasslands, and an urban valley area of intensive residential, commercial and industrial uses. Tidal influence extends from the Bay to Montague Expressway between Reaches C and D. Since 1963, the full length of the river's mainstem and much of the tributary reaches has been channelized, straightened, armored and/or confined between levees constructed for flood control purposes.

B. Status of steelhead in the action area

Very little information about the historical or current abundance of steelhead in the Guadalupe River system is available. Snyder (1905) documented steelhead in the Guadalupe River, and Skinner (1962) also reported runs of steelhead in the river, though he noted them to be in decline following construction of three major dams on the Guadalupe River system. Leidy (2000a) conducted the most extensive survey of steelhead and other fish in streams of the San Francisco Bay to date, and he captured juvenile steelhead in several Guadalupe River locations upstream of the action area. From 1997 through 2000, the District operated fish traps in the main watersheds of the Santa Clara Basin that currently support steelhead, including the Guadalupe River (Entrix 2000). Trapping efforts have been brief and limited, but the District did find steelhead adults migrating upstream in the Guadalupe River in 1998, and a small number of smolts migrating downstream in 1998 and 1999 (Entrix 2000).

The action area in the lower Guadalupe River is primarily a migratory pathway for adult and juvenile CCC steelhead traveling between the ocean and upstream spawning and rearing habitat. In the action area, habitat conditions are poor for summer rearing due high water temperatures, highly embedded substrate, and lack of habitat complexity. Immediately upstream of the action area in the Guadalupe River, fish were captured and relocated from several hundred linear feet of the stream during the summers of 2001 and 2002 for construction of the Downtown Flood Control Project. No steelhead were observed or captured in this reach of the Guadalupe River during the summer period. However, in the late summer of 1997, juvenile steelhead were observed in the LGRP action area immediately following a moderate rainfall event (Jones and Stokes 1997). This was believed to have been an unusual event due to an unseasonable storm that washed small steelhead downstream from rearing habitat in upstream tributaries. In general, evidence suggests that steelhead spawn or rear in the upper Guadalupe River watershed and the LGRP action area is primarily a migration corridor.

C. Factors Affecting Environment Within the Action Area

The factors presenting risks to naturally reproducing CCC steelhead are numerous and varied. A number of documents have addressed the history of human activities, current environmental conditions, and factors contributing to the decline of steelhead listed under the ESA. For example, NOAA Fisheries has prepared a range-wide status review for west coast steelhead (Busby *et al.* 1996). Additional information is available in Federal Register notices announcing steelhead listing proposals and determinations (August 9, 1996, 61 FR 41541; August 18, 1997, 62 FR 43937; March 19, 1998, 63 FR 13347; February 9, 1999, 64 FR 5740; February 16, 2000, 65 FR 7764). The July 2000 Programmatic Environmental Impact Statement/Report for the CALFED Bay-Delta Program (CALFED 2000) and the October 1999 Programmatic Environmental Impact Statement for the Central Valley Project Improvement Act (DOI 1999) provide excellent summaries of historical and recent environmental conditions for steelhead in the Central Valley, Delta, and San Francisco Bay.

The technology industry in the Silicon Valley region – an area once devoted almost exclusively to agriculture – has stimulated intense population growth and urban development. Since 1940,

human population and urbanization has increased dramatically in Santa Clara County. Steelhead habitat in the action area is affected by a broad range of activities, including flood control; road, highway and bridge construction; residential development; water development; and other types of commercial urbanization of the watershed. In particular, changes to instream flow quantities and timing, loss of riparian vegetation, loss of in-stream structure, increased water temperatures, and fish passage impediments have adversely affected the proper functioning condition of spawning, rearing, and migratory habitat in the Guadalupe River.

1. Water development

Flood control and water supply dams constructed in the upper Guadalupe River Basin have affected water quantity, timing, and quality in the action area. Altered streamflows have affected the natural cycles by which juvenile and adult steelhead base their migrations. The seasonal distribution of flow through the action area differs in that the magnitude and duration of peak flows during the winter and spring are reduced by water impoundment in upstream reservoirs. District reservoir operations typically store winter storm runoff for release during dry periods to recharge groundwater. Overall, present day water management practices in the watershed reduce natural flow variability by creating more uniform flows year-round that diminish migratory cues, natural channel forming, and food web functions in the action area. Reservoir construction has also trapped stream gravels behind dams and contributed to reduced gravel recruitment in the action area.

Current groundwater recharge operations have resulted in high groundwater levels in the action area. Inflow from groundwater sources provides summer flow in the Guadalupe River, but the discontinuous nature of the groundwater sources creates reaches that may be intermittently dry. This discontinuous and intermittent flow of the river in the action area significantly limits the availability of summer rearing habitat that might be utilized by juvenile steelhead.

2. Land use and urbanization

Land use activities associated with urban development and industrial development have altered fish habitat quantity and quality in the action area. In the past 60 years, agricultural development and urbanization has resulted in the diking and filling of tidal marshes along the lower Guadalupe River. Levees have been constructed and the lowermost portion of the Guadalupe River has been re-routed from Guadalupe Slough to Alviso Slough. Riparian vegetation has been lost in recent decades as a result of urbanization, road and bridge construction, and flood control projects. The quantity and quality of remaining riparian vegetation and aquatic habitat structure has declined due to the construction of levees and stream channelization. The District's Stream Maintenance Program regularly clears vegetation and removes sediment from the stream channel in the action area to increase flood conveyance capacity. Increased impervious surfaces associated with urbanization in the action area have decreased rainfall infiltration rates in upland habitats and increased peak flood flows. Stream banks have been stabilized with rock riprap and other hardscape materials.

3. Pollution

Industrial and municipal wastes have been discharged into the waters of action. However, large-scale pollution of the river was partially relieved by the passage of the Clean Water Act in 1972,

resulting in the construction of new sewage treatment plants in all cities around San Francisco Bay including San Jose. Non-point sources of pollution, such as urban runoff and fine sediment, continue to degrade water quality. These contaminants may impair physiological development of juvenile salmonids that could reduce survival potential during their oceanic phase.

4. Introduction of non-native species

As native fishes became depleted in the late 19th century, non-native species were brought in to the bay and delta including American shad, striped bass, common carp, and white catfish. As non-native fish populations boomed, those of native fishes declined further. Introduction of non-native species accelerated in the 20th century through deliberate introductions of fish and unintended introductions of invertebrates through ballast water of ships. Establishment of non-native species in the action area was probably facilitated by altered hydrologic regimes and habitat degradation. Today, non-native fish (e.g. carp, bass) and non-native invertebrates (e.g. mitten crab) are common in the action area.

EFFECTS OF THE PROPOSED ACTIONS

The proposed LGRP is anticipated to result in both short-term and long-term impacts to listed CCC steelhead. Potential short-term impacts to steelhead are associated with construction and include: (1) fish collection and relocation activities; (2) entrapment of fish within cofferdams and silt curtains; and (3) exposure to increased levels of turbidity. Potential long-term impacts include: (1) permanent changes to the physical and biological environment of the action area; and (2) loss of juvenile steelhead during flood events through overtopping at the Alviso Weir.

Listed adult and juvenile CCC steelhead are typically found in the action area during periods of migration between the ocean and their natal habitat in the upper Guadalupe watershed. Downstream migration of juvenile CCC steelhead through the action area generally occurs from February through late May. Peak juvenile migration periods generally coincide with winter high streamflow events during the months of February through April. CCC steelhead adults migrating upstream to spawning habitat in the tributaries of the Guadalupe River are most likely migrating between December and March.

Proposed conservation measures, including BMPs established by the District for in-stream work, are expected to avoid or minimize negative impacts, notably the potential for sedimentation of steelhead habitat and loss of riparian vegetation. The LGRP also includes a number of habitat enhancements in the action area.

A. Short-term effects related to LGRP construction

Potential short-term effects of the LGRP are primarily related to dewatering work sites prior to construction.

Dewatering and stream diversion activities

The following sites within the LGRP action area may be dewatered to isolate the work area

during construction: (1) 100 feet upstream and downstream of the Highway 237 bridge replacement, for approximately five months in 2003 and 2004; (2) 328 feet upstream and downstream of the Airport Parkway bridge replacement, for approximately three months; (3) 460 feet of channel downstream of the I-880 bridge in Reach A for construction of the vortex rock weirs, of approximately one month duration; and (4) at various locations for outfall modifications, rock slope protection and sediment removal. To minimize the potential disruption of downstream migrating steelhead smolts, the District will only divert stream flows or conduct any construction activities below ordinary high water between June 1 and October 15. However, other in-channel work near the top of the bank may begin as early as May 1, if average stream temperatures in the action area are at or above 68°F for five consecutive days. Stream flow diversions which require pumping will not begin until June 15 and pumping will cease by September 1. All pumps will be screened to meet California Department of Fish and Game and NOAA Fisheries criteria for juvenile anadromous salmonids. These work windows make it unlikely that LGRP dewatering/diversion and other construction activities will affect the outmigration of juvenile steelhead, because the majority of juvenile outmigration is completed by early May. The work window will also avoid the adult upstream migration season which typically begins in late November or December. If an unseasonable rainfall event or other event results in the movement of juvenile steelhead into the action during the summer months, all diversions will provide for passage and the fish screens on the pumps will prevent entrainment and impingement of the smallest life stages of steelhead.

Prior to water diversion and dewatering of each site, the District will encourage fish to move out of the area to be dewatered and remaining fish will be collected and relocated in an operation referred to as the Construction Area Fish Management Program. Cofferdams will be placed in the channel sequentially, upstream before downstream, with diversion proceeding incrementally over a four-hour period to encourage any fish present to swim out of the affected area with receding flows (District 2002c). The Washington Department of Fisheries (1992) has shown under experimental conditions that some juvenile steelhead may retreat to cobbled spaces in the stream substrate within dewatered areas instead of escaping with receding stream flows, and if any juveniles are present in these areas, they may not escape the dewatering process. However, this situation is not expected due to the low likelihood that juvenile steelhead will be in the action area during construction.

The District proposes to collect fish remaining at the construction site with nets and electrofishing gear prior to fully dewatering construction sites. The fish would be relocated to the river away from the site in order to avoid their interaction with construction equipment. The District proposes to have a qualified fish biologist do the relocation work based on current standards of care for fish collection, transport, and release. Any fish collecting gear, whether passive (Hubert 1983) or active (Hayes 1983) has some associated risk to the fish, including stress, disease transmission, injury, or death. Electrofishing is of particular concern. Electrofishing can kill both juvenile and adult fish, and researchers have found serious sublethal effects including spinal injuries (Reynolds 1983, Zeigenfuss 1995, Habera et al. 1996, Nielsen 1998, Habera et al. 1999, Nordwall 1999, Sharber and Carothers 1988). Estimates of non-lethal spinal and hemorrhagic injury rates resulting from electrofishing range from zero to 23 percent (Hollender and Carline 1994; Habera *et al.* 1996; Kocovsky *et al.* 1997). An average five-

percent injury rate has been suggested for steelhead in tributaries of the Yakima River in Washington (McMichael *et al.* 1998). The injury rate for juvenile steelhead relocated during LGRP activities is likely to be low, because smaller fish (250 mm or less in length) have less risk of injury from electrofishing than do larger adult fish (Hollender and Carline 1994; Dalby, McMahon, and Fredenberg 1996; McMichael *et al.* 1998).

Based on experience in the construction of the Downtown Guadalupe River Flood Project immediately upstream of the action area, NOAA Fisheries expects few to no steelhead to be present in the action area during the summer months. In the unlikely event juvenile steelhead are present during electrofishing and relocation activities, unintentional mortality of listed juvenile CCC steelhead is not likely to exceed five percent of the fish subjected to handling, and can be reduced to near one percent with increased skill and experience of the operator. Fish that are not collected and remain in the construction site will be subject to stranding in isolated pools, degraded water quality, high water temperatures, and mortality. Given the proposed work window, the location of the action area low in the Guadalupe River system, and the discontinuous streamflow situation on the river, adult and juvenile steelhead are not expected to be encountered during the June 1 to October 15 in-water construction period.

Construction activities

Heavy equipment will operate in the river channel and in dewatered areas, altering the characteristics of the stream channel through disturbance and substrate compaction. Although measures have been developed to avoid spill of contaminants, a low risk of equipment fluid leakage may contaminate the streambed. Stream bank sediments mobilized during or after construction may temporarily increase turbidity. These activities present a small level of risk to steelhead habitat. However, the potential impacts associated with dewatered work areas, including increased sedimentation and/or contamination of the stream channel, are expected to be avoided and minimized with proper implementation of the project's conservation measures. Specifically, the Storm Water Pollution Prevention Plan, Toxic Materials Control and Spill Response Plan, and District BMPs are designed to minimize and avoid adverse effects to the stream channel.

Construction of floodwalls and levees, demolition and construction of bridges, and the construction of grade control structures may result in the input of small amounts of sediment upon the beginning of the rainy season following construction. Sediment control measures outlined in the conservation measures section of the project description should minimize these impacts. Stream gravels removed or disturbed during construction activities will be conserved to the extent possible and replaced with additional gravel upstream of the grade control structures following construction (District 2002d). In addition, gravel abundance at the grade control structures will be monitored and if losses are detected, further mitigated.

B. Long-term effects of the LGRP

Potential long-term effects of the LGRP include permanent changes to the biological and physical environment of the river and loss of fish during flood events due to the overtopping of the Alviso Weir.

Vegetation and sediment removal activities

The LGRP maintenance program includes periodic removal of accumulated sediment in the stream channel and riparian vegetation in designated areas. In bridge transition zones (100 feet upstream and downstream of each bridge), vegetation clearing would remove approximately 104 feet of existing high-quality overhead riparian cover and this area will be maintained free of vegetation. This linear distance is about 0.9 percent of the 11,184 feet of total riparian cover existing in the project area. Much of the riparian cover in the Guadalupe River has been lost in recent decades as a result of urbanization, road and bridge construction and flood control projects. Removal of riparian vegetation has contributed to reduced overhead and instream cover; decreased food availability; increased water temperatures, and loss of filtration of surface runoff. The loss of 104 linear feet of existing riparian vegetation associated with the LGRP is relatively small and the proposed revegetation of 4,666 linear feet of riparian cover in Reach A, between the Airport Parkway and Airport Island bridges, would compensate for this loss.

Downstream of the I-880 at 10 other bridge and aqueduct crossings, some lower quality riparian vegetation will be removed periodically. However, native vegetation within the low-flow channel buffer will not be cleared. Therefore the removal of this lower quality riparian vegetation is not expected to affect habitat conditions for steelhead.

For flood conveyance purposes, vegetation will be removed periodically throughout Reaches A through G to maintain the desired channel capacity. Vegetation removal in the LGRP action area will be conducted as part of the SMP, and mitigated separately from the LGRP as part of the SMP. Woody and herbaceous vegetation will be removed with herbicide or cut to a height of less than one foot from all reaches during the summer and fall months. Herbicide treatment will be accomplished with a product called Aquamaster. Aquamaster's active ingredient is glyphosate, known to be relatively benign for aquatic life including salmonids and approved for aquatic use. The addition of surfactants (R-11 or Target Pro-Spreader) to glyphosate formulations to increase plant uptake, however, could result in harmful or lethal toxic effects to steelhead. Surfactants will not be used in the action area (Terry Neudorf, District, pers. comm. January 2003). Herbicides may also be applied with or without dye, so that applicators can identify treated material or monitor any over-spray occurrences. Some dyes may be toxic to steelhead.

Vegetation removal will be limited to only that necessary to meet flood control and water supply District requirements. The District proposes to make herbicide applications between May 1 and October 31, and not within the 19.7 foot low-flow channel buffer zone (except for spot treatment of exotic vegetation) or when rain is forecast within 72 hours. The use of these herbicide formulations that are approved for aquatic environments combined with exclusion from the low-flow channel buffer is expected to minimize impacts to steelhead and their instream habitat.

Sediment management activities for the LGRP include periodic excavation of overflow channels adjacent to the low-flow buffer areas in Reaches B through E. Sediment removal will not be performed within the low-flow channel buffer area. The primary adverse effect that can result from excavation of these overflow channels is the potential for fish stranding as high storm flows recede. Steelhead may become trapped in depressions or channels with insufficient gradient to

allow return to the main stream channel. To minimize the potential for stranding events, all sediment excavation areas will be designed to connect to the main channel at their downstream end, and will be graded to drain thoroughly as flows recede (District 2002d). All sediment excavation areas will be inspected immediately following large storm events between October 1 through April 30 to identify potential stranding areas. Problem stranding areas will be re-graded prior to the next storm event (District 2002c). Sediment management activities are not expected to adversely affect steelhead habitat and the potential for fish stranding will be minimal with proper contouring of the streambed.

Operation of the Alviso Weir

The proposed 1,000-foot long weir on the west bank of Alviso Slough would be designed to begin spilling when floodwaters in the Guadalupe River exceed 6,800 cfs. Flows in excess of 6,800 cfs will overtop the weir and spill into the salt ponds adjacent to the lower river. The expected frequency interval of spill events at the Alviso Weir (i.e. flows in excess of 6,800 cfs) is about 4.5 years.

High streamflow events associated with operation of the weir typically occur during winter storms between January and March. This period coincides with adult steelhead migration upriver and with the early portion of juvenile steelhead outmigration. Steelhead that spill over the weir will become stranded in salt ponds and will be separated from the river and San Francisco Bay by levees. Without access back to the river or bay, stranded steelhead are expected to succumb in the salt ponds due to high salinity, low dissolved oxygen levels, exposure to predation by birds, and other adverse conditions.

The 1,000-foot long weir is designed to minimize approach velocities and overtop as sheetflow. Sheet flow over the weir will vary from very small amounts during a five-year flood event up to 40 percent of the Guadalupe River volume during a 100-year flood event of 18,350 cfs. Relative to the full stream volume of the action area, the volume of flow over the weir is relatively small except during the most severe flood events. Water velocities over the top of the weir may range up to 5.6 feet per second (Dave von Rueden, pers. comm. December 2002).

Quantitative estimates of steelhead lost due to operation of the weir would be highly speculative, but the risk that juvenile steelhead may be carried with flood waters over the top of the weir is present. Examination of the weir design, steelhead swimming behavior, flood frequencies, and other variables suggest the number of steelhead lost at the weir will be minimal. The weir's design for sheet flow and low approach velocities conditions are likely to discourage steelhead from crossing the structure. Adult and juvenile steelhead are likely to travel in deeper thalweg areas of the channel and avoid areas of sheetflow. The burst swimming speeds of juvenile and adult steelhead which are estimated to be 5 feet per second (fps) and 10 fps (Flosi et. al 1998), respectively, will allow fish to escape most overtopping flow conditions at the weir. Adult steelhead are unlikely to be actively migrating upstream during flood events and, thus, are not likely to be in the vicinity of the weir during its operation. The weir is also expected to operate relatively infrequently (only flood events in excess of 4.5-year recurrence interval) and then operations will typically be less than 24 hours (District 2002d). Most flood events of this magnitude are in the early portion of the outmigation season of steelhead smolts which also

minimizes their potential occurrence at the site during weir operations.

Completion of the LGRP will increase the volume of flows overtopping the weir site during flood events into the salt ponds by 16 to 23 percent, but countervailing this increased risk at the weir is a decreased risk of fish overtopping other levee sites. Under existing conditions, Guadalupe River flood flows exceeding 6,800 cfs overtop the levees in several locations along Alviso Slough, inundating not only the adjacent salt ponds, but the community of Alviso. In Reaches A through G flood flows also occasionally overtop the levees. Although fish stranding during storm events have not been documented, flood flows over existing levees has been presumably stranding fish in areas from which they cannot return to the main channel, resulting in mortality. The LGRP will heighten existing levees in Reaches A through G and the Alviso Slough area, virtually eliminating the potential for fish stranding at sites other than the Alviso Weir.

In the near future, U.S. Fish and Wildlife Service will be assuming full responsibility for managing salt ponds adjacent to the lower Guadalupe River including Ponds A5, A6, A7, A8W and A8D. Floodwaters overtopping the weir initially enter pond A8W and will eventually flow into ponds A5, A6, A7 and A8D. At present, these ponds are closed systems and do not flow into San Francisco Bay. Therefore, juvenile steelhead which overtop the Alviso Weir are expected to be lost to poor water quality and lack of access to return to the river or bay. However, planning for the interim and long-term management of the salt ponds in this area is underway and could include restoring a tidal connection with San Francisco Bay. If tidal influence is restored to Pond A8W, juvenile steelhead that overtop the weir would likely find their way back to the river or bay and continue their downstream migration to the sea. Unfortunately, there are several challenges to restoring tidal action in Pond A8W, but several neighboring ponds are good candidates for restored tidal wetlands. Discussions between NOAA Fisheries, Fish and Wildlife Service, and the California Department of Fish and Game regarding the future management of Pond A8W and adjacent salt ponds are expected to continue. There is a potential for the elimination of lethal take of juvenile steelhead at the Alviso Weir if a tidal connection can be re-established to Pond A8W.

Bank protection

The bank protection methods proposed, particularly hardscape designs, may adversely affect steelhead habitat. Rock riprap and other hardscape materials placed on the bank prevent the growth of new riparian vegetation and generally reduce habitat complexity and diversity. Gabion rock walls have similar effects, and are of additional concern if placed below the ordinary high water line, where the wire mesh holding the rock degrades due to rusting, abrasion and vertical loading. Once the gabion baskets begin to deteriorate, they can injure and trap fish migrating through the channel. However, no gabion basket bank stabilization in the LGRP is proposed below the ordinary high water level. Thus, gabion baskets installed for the LGRP are not expected to become future fish entrapment risks.

Armored bank protection is expected to impact approximately a total of 10,000 feet of streambank (approximately 5000 feet on each side) in the action area. However, bank protection will be constructed outside the low-flow buffer area, and riparian vegetation affected will be

replaced as part of the LGRP Mitigation and Monitoring Plan. Therefore, the adverse affects of LGRP bank protection on steelhead habitat are expected to be minimal.

Grade stabilization structures

The construction of six grade control weirs in Reach A and six invert stabilization structures to prevent bridge scour at bridge locations in Reaches A, B, C and D will stabilize the channel bottom and create plunge pool habitat at several locations immediately downstream of I-880 in Reach A. These structures are designed and expected to facilitate anadromous fish upstream passage by providing a minimum depth of six inches across the weir crest at a low flow of approximately 10 cfs. The grade structures are also expected to improve fish habitat by enhancing the pool-riffle sequence in this reach. Fish passage conditions at the grade control weirs and invert stabilization structures will be monitored as part of the LGRP Mitigation and Monitoring Plan (District 2002c). Quantitative measurements of water depth and velocity, in addition to visual assessment, will be conducted to ensure that adequate fish passage conditions are maintained.

Mitigation and monitoring plan

The LGRP proposes to plant and revegetate several areas in the action area and off-site. Riparian vegetation will be planted within 15 feet of the low-flow channel on currently unvegetated bank areas. Plantings at other sites are presented in detail in the Mitigation and Monitoring Plan for the LGRP (District 2002c). In total, 4,666 linear feet of riparian cover in Reach A, between the Airport Parkway and Airport Island bridges, will be planted for the LGRP. This program is expected to enhance stream habitat for steelhead by improving overhead and instream cover, decreasing water temperatures, improving filtration of fine sediment and contaminants in storm runoff, and generally increasing habitat diversity and complexity.

Indirect effects

Indirect effects are defined as effects caused by the proposed action that are later in time, but still are reasonably certain to occur (50 CFR § 402.02). For the LGRP, it is anticipated that the extensive amount of earth moving and levee expansion will result in the mobilization of additional fine sediments from the stream bank into the Guadalupe River. The project proposes a number of measures to avoid and minimize the introduction of sediments into the river, but this amount of disturbance along several miles of stream will likely exacerbate sediment input during the two winters immediately following the summer construction seasons. The accumulation of fine sediment in the lower Guadalupe River is currently impairing growth of aquatic vegetation, invertebrate production, and reducing instream cover for the smallest life stages of fish. Two summer seasons of construction will likely exacerbate this problem temporarily until construction is completed and the banks become more stable.

For CCC steelhead, the lower Guadalupe River is primarily a migration corridor and the life stages that are most sensitive to sediment (i.e. spawning and rearing) are not expected to occur in the action area. Thus, temporary increases in sediment accumulation due to LGRP construction is not expected to impact steelhead. In addition, flood flows and the District's sediment removal program are expected to periodically move accumulated sediments in stream reaches in the action area.

CUMULATIVE EFFECTS

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the action area encompasses the lower Guadalupe River and its associated riparian corridor extending to the right of way at the outside of each bank top, from the I-880 crossing to the mouth of the river at San Francisco Bay. The action area includes Alviso Slough and all adjacent salt ponds affected by operation of the LGRP.

Few future non-Federal actions that may affect the action area are expected to occur. Increased population growth, and urbanization will be very limited, because the area is already highly developed. Little to no additional impacts to water quality and riverine productivity are anticipated from stormwater runoff and increased population growth.

Future actions likely to affect the action area include: (1) District's Pump Station Emergency Operations Plan, which will establish operating criteria for stormwater pump stations along the Guadalupe River during major storm events and match pumping levels to available channel capacity; (2) Ulistac Natural Area, a passive recreation and habitat restoration site on 40 acres of open space along the river (Reach E) in the City of Santa Clara; (3) Rivermark Project, a plan for extensive residential, commercial and other development on 20 acres of land along the river (Reach D) in the City of Santa Clara; (4) Legacy Terrace Project, a plan for extensive commercial and other development on 71 acres of land along the river (Reach G); and (5) Lincoln/Highway 237 Assemblage, a plan for commercial, industrial and road development near the river (Reach G).

These projects are not likely to adversely affect steelhead habitat in the action area. Most will involve upland construction. Some additional input of contaminants may occur from increased surface water runoff and non-point source pollution. However, actions that conform with the City of San Jose Riparian Corridor Policy Study, provisions of which have been incorporated into the City of San Jose's General Plan, are expected to protect water quality and riparian habitat.

INTEGRATION AND SYNTHESIS OF EFFECTS

Construction and operation of the LGRP may adversely affect steelhead and steelhead habitat. Direct mortality and injury of steelhead during project construction is expected to be minimal due to the project's limited construction period (two years), the timing of the proposed work, and the location of the action area low in the Guadalupe River system. Fish surveys in and near the action area indicate that few if any juvenile or adult steelhead are likely to be present in the action area during the construction season. If steelhead are encountered in construction work sites to be dewatered, fish relocation activities will proceed according to the Construction Area Fish Management Program specified in the project's conservation measures. NOAA Fisheries

anticipates that this program will be adequate to ensure a low risk of injury or mortality to steelhead during construction.

There is a small risk of mortality to juvenile steelhead during operation of the Alviso weir. The simultaneous occurrence of a series of independent events, all of which have a low percentage likelihood of occurring, represents this level of risk. For this risk to be significantly higher, a large magnitude flood event would have to take place late in the season, when the primary juvenile steelhead outmigration period is underway. Juveniles would have to be washed downstream to or be present at the weir location while the flood hydrograph at the weir is peaking, and they would have to be close enough to the weir to encounter unavoidable approach velocities. This risk is greater than zero but is estimated to be small. These infrequent, minor losses of juvenile steelhead from the population are not expected to result in reduced adult returns in subsequent years.

There will be temporary and permanent loss and degradation of some habitat elements, including water quality due to temporarily increased turbidity and loss of riparian vegetation. However, the project proposal provides substantial protection for steelhead habitat. Conservation measures included in the project proposal avoid and minimize potential impacts associated with degraded water quality, loss of riparian vegetation, changes to fish passage conditions and other effects of construction activities.

The project proposal also includes restoration and enhancement of riparian habitat through the LGRP's mitigation program. Once the newly planted vegetation in Reaches A, B and C becomes established, steelhead migrating through these reaches will benefit from improved shade, cover and habitat complexity, and increased food production potential generated by diverse native riparian vegetation. However, the benefits of the proposed riparian plantings are expected to take as much as 25 years to be fully realized, as mature native riparian habitat develops over time.

Given the small numbers of juvenile steelhead that may be lost at the Alviso weir, the construction minimization measures, and the project enhancement/mitigation actions, the proposed LGRP is not expected to reduce appreciably the likelihood of survival and recovery of CCC steelhead.

CONCLUSION

After reviewing the current status of the CCC steelhead, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is NOAA Fisheries' biological opinion that the proposed Lower Guadalupe River Project is not likely to jeopardize the continued existence of threatened CCC steelhead.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by NOAA Fisheries as an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are nondiscretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require permittees to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps, or their permittee must report the progress of the action and its impact on the species to NOAA Fisheries as specified in the incidental take statement. (50 CFR §402.14(i)(3))

A. Amount or extent of take

NOAA Fisheries anticipates that take associated with the LGRP will be in the form of mortality, injury, and harassment to juvenile steelhead through temporary impacts from construction activities and long-term impacts from operation of the Alviso Weir. Lethal take may occur during the dewatering of work sites and fish relocation activities prior to construction. Since few if any steelhead are expected to be presented in the action during construction, less than 5 juvenile steelhead are expected to be encountered during each season of construction. No adult listed salmonids are expected to be encountered during construction activities. Of these 5, no more than 1 is expected to be injured or killed.

Operation of the Alviso Weir is expected to result in a small amount of lethal take of outmigrating steelhead smolts. The relative magnitude of juvenile steelhead losses due to the overtopping of flood waters at the weir cannot be quantified, but take is expected to occur. Due to the low frequency and short duration of weir operations, very few listed juvenile salmonids are expected to be lost to entrapment in the salt ponds adjacent to the Alviso Weir. This loss is expected to be limited to juvenile fish and is expected to occur at a recurrence interval of 4.5 years or greater, when flows exceed 6,800 cfs at the weir.

B. Effect of the take

In the accompanying biological opinion, NOAA Fisheries has determined that the anticipated take is not likely to result in jeopardy to CCC steelhead.

C. Reasonable and prudent measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of CCC steelhead:

1. Measures shall be taken to reduce and monitor impacts to steelhead and their habitat associated with construction, diversions, dewatering, and fish relocation activities.

2. Measures shall be taken to reduce and monitor the risk of harmful effects to steelhead from the application of herbicides.

3. Measures shall be taken to ensure that design features of the LGRP will provide adequate conditions for steelhead and their habitat.

4. Measures shall be taken to ensure that LGRP structures do not impede fish passage through the action area.

D. Terms and conditions

To be exempt from the prohibitions of section 9 of the ESA, the parties must comply with the following terms and conditions, which implement the Reasonable and Prudent Measures described above. These terms and conditions are non-discretionary and should be included as permit requirements under any federal permit issued by the Corps to the District.

1. Measures shall be taken to reduce and monitor impacts to steelhead and their habitat associated with construction, diversions, dewatering, and fish relocation activities.

   1a. Fill material for cofferdams will be fully confined with the use of plastic sheeting, sheetpiles or sandbags, or with other non-porous containment methods, such that sediment does not come in contact with tidal or stream flows and increase turbidity. Alternatively, gravel or clean crushed stone may be used without plastic sheeting, sandbags, etc.

   1b. A qualified fisheries biologist shall be on-site to collect and relocate native fish before and during the installation of all coffer dams, bypass pipes or channels, diversion dams or other facilities designed to de-water or divert stream flows at project work areas. Juvenile steelhead remaining in de-watered areas and locations isolated from the live stream shall be collected and returned to appropriate habitat upstream or downstream of the work area. Dip nets, seine

nets, and other types of nets are preferred for fish collections. However, electrofishing equipment may be used to collect stranded fish in areas where nets are not practical. Additional fish collection gear may be used with prior verbal approval from NOAA Fisheries. Contact: NOAA Fisheries Santa Rosa Area Office, Protected Resources Division, San Francisco Bay Team Leader, 777 Sonoma Avenue, Room 325, Santa Rosa, California 95404, (707) 575-6050, fax (707) 578-3435.

1c. If electrofishing techniques are utilized during fish relocation activities, at least one member of the field crew must be familiar with NOAA Fisheries' ~~electrofishing guidelines and have a minimum of three years'~~ ~~field experience~~ with electrofishing techniques. The field crew must have a copy of this biological opinion, including these terms and conditions, available on site at all times.

1d. Fish capture and relocation activities must be completed before 11:00 a.m. each day to minimize risks from thermal impacts. Fish rescue may continue past 11:00 a.m. if the weather is unusually cool due to foggy or cloudy weather. Electrofishing may not be performed if water temperatures exceed 70°F/21°C.

1e. In order to monitor the impact of incidental take associated with fish relocation activities, the Corps or its applicants must submit a report to NOAA Fisheries' Santa Rosa Area Office not later than November 15 of the year in which the work is completed. The report shall include the results and any incidental take that occurred during implementation of the project that included fish relocation. The report shall include: (1) the results of pre-construction surveys and names and qualifications of biologists who completed them; (2) any relevant information regarding fish injuries or mortalities; (3) extent of the area dewatered and duration of dewatering; and (4) water and air temperatures taken at the beginning and end of each fish relocation effort. The report shall be sent to:

NOAA Fisheries
Protected Resources Division
San Francisco Bay Team Leader
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

1f. All steelhead mortalities must be retained, placed in an appropriately sized whirl-pak or zip-lock bag, labeled with the date and time of collection, fork length, location of capture, and frozen as soon as possible. Frozen samples must be retained until specific instructions are provided by NOAA Fisheries.

1g. NOAA Fisheries' Santa Rosa Area Office, San Francisco Bay Team Leader (707-575-6060) shall be contacted within 24 hours if steelhead mortality rates exceed five percent during any fish relocation operation. In addition, NOAA Fisheries shall be contacted within 24 hours if one or more steelhead are injured or killed

during any other activities related to the project. The purpose of the contact shall be to review the activities resulting in injury and mortality and to determine if additional protective measures are required.

1h. If steelhead are collected or observed in the LGRP project area during in-channel construction activities, NOAA Fisheries' San Francisco Bay Team Leader shall be notified by telephone at 707-575-6060 within 24 hours.

2. Measures shall be taken to reduce and monitor the risk of harmful effects to steelhead from the application of herbicides.

2a. No surfactants may be added to herbicides used to control vegetation as part of LGRP construction or in future maintenance activities (i.e. District's Stream Maintenance Program) in the Guadalupe River channel. Only unadulterated formulations of glyphosate approved for aquatic use by the manufacturer shall be used.

3. Measures shall be taken to ensure that design features of the LGRP will provide adequate conditions for steelhead and their habitat.

3a. Gabion baskets will not be installed below the 25-year flood event level except for the specific sites detailed in the project description.

3b. Riparian vegetation will be integrated into rock slope protection to the maximum extent practical where it does not conflict with flood conveyance goals. Vegetation removal from LGRP structures shall be the minimum amount necessary to meet flood conveyance criteria.

4. Measures shall be taken to ensure that LGRP structures do not impede fish passage through the action area.

4a. Grade stabilization structures installed in Reaches A through D shall be monitored and measured monthly during the period between November and May for 10 years following construction.

4b. The following quantitative criteria shall be used to determine if fish passage has been compromised at LGRP structures:

(1) Water depths must equal or exceed one foot when flow is equal to or greater than four cfs.
(2) Velocity will be less than five feet per second.
(3) Depth and velocity criteria will be met for at least a continuous portion of 10 percent or four feet of the total wetted channel width, whichever is greater.

4c. If quantitative or qualitative monitoring of the grade stabilization structures installed in Reaches A through D indicates that fish passage for juvenile or adult steelhead has become partially or completely blocked, NOAA Fisheries' San Francisco Bay Team Leader will be notified by telephone at 707-575-6060 within 72 hours and steps taken to ensure that fish passage for juvenile and adult steelhead is promptly restored.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, or to develop information.

1. The Corps and the District should coordinate with NOAA Fisheries, U.S. Fish and Wildlife Service, California Department of Fish and Game, San Francisco Bay Regional Water Quality Control Board and other agencies on planning for the interim and long-term management and restoration of Pond A8. Pond A8 and adjacent ponds (Ponds A5 and A7) could be restored to tidal marsh habitat and provide for the free passage of juvenile steelhead to and from San Francisco Bay. The future tidal restoration of Pond A8 and adjacent ponds will eliminate the loss of fish with the overtopping of floodwaters at the Alviso Weir.

2. The Corps should work with the District to develop programs, design criteria, conservation measures and additional BMPs that will further the purposes of the ESA in the Gudalupe River. These actions could include the identification and removal of culverts and other fish passage barriers to improve passage and flow conditions for steelhead, development of biotechnical bank stabilization guidelines, and development of comprehensive riparian revegetation and monitoring plans.

3. The Corps and District should ensure that permits issued by their respective agencies for new projects in the Guadalupe River be subject, at minimum, to the guidelines presented in the City of San Jose's Riparian Corridor Policy Study (1999).

REINITIATION OF CONSULTATION

This concludes formal consultation on the proposed storm damage repairs. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the actions has been retained (or is authorized by law) and if: 1) the amount or extent of taking specified in the incidental take statement is exceeded; 2) new information reveals effects of the action that may affect listed species or critical habitat in a

manner or to an extent not considered in this opinion; 3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, or expected to be exceeded, formal consultation shall be reinitiated immediately. In addition, reinitiation may be required if after the five-year monitoring period, performance standards for revegetated sites have not been met.

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Enclosure 2

LOWER GUADALUPE RIVER FLOOD PROJECT
SANTA CLARA VALLEY WATER DISTRICT

ESSENTIAL FISH HABITAT CONSERVATION RECOMMENDATIONS
(Magnuson-Stevens Fishery Conservation and Management Act - EFH Consultation)

Amendments made to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) in 1996 set forth new mandates for the National Marine Fisheries Service (NOAA Fisheries), regional fishery management councils, and federal action agencies to identify and protect important marine and anadromous fish habitat. The councils, with assistance from NOAA Fisheries, are required to delineate essential fish habitat (EFH) in fishery management plans (FMPs) or FMP amendments for all managed species. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with NOAA Fisheries regarding potential adverse effects of their actions on EFH, and respond in writing to NOAA Fisheries' conservation recommendations. In addition, NOAA Fisheries is required to comment on any state agency activities that would impact EFH.

The Pacific Fisheries Management Council (PFMC) has delineated EFH for the following FMPs: West Coast groundfish, coastal pelagic species and Pacific Coast salmon. EFH for Pacific Coast salmon (Chinook salmon, *Oncorhynchus tshawytscha*. PFMC 1999) occurs within the area to be impacted by the preceding biological opinion and consequently triggers EFH consultation.

IDENTIFICATION OF ESSENTIAL FISH HABITAT

EFH is defined in the MSFCMA as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity..." NOAA Fisheries regulations further define "waters" to include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include areas historically used by fish where appropriate; "substrate" to include sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" to mean the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" to cover a species' full life cycle.

For Pacific coast salmon, the geographic extent of EFH includes both marine and freshwater habitat. Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (e.g., natural waterfalls in existence for at least several hundred years) (PFMC 1999). Pacific Coast salmon EFH includes the Guadalupe River, where the proposed Lower Guadalupe River Project (LGRP) activities would occur.

The Guadalupe River is known to provide migratory, spawning and rearing habitat for Chinook salmon. The majority of fish are believed to spawn in downtown San Jose reaches of the stream, but spawning has been documented from the upper influence of tidewaters to the upper reach of the mainstem Guadalupe River and in Los Gatos Creek (District 2002d). These fish are considered to be most closely related to Central Valley fall-run Chinook salmon, which is not presently listed under the Endangered Species Act (NMFS 1999; Garcia-Rossi and Hedgecock 2003)

PROPOSED ACTIONS

The proposed actions in the LGRP are described in detail in the associated biological opinion for the threatened Central California Coast steelhead.

EFFECTS OF THE PROJECT ACTION

The following is a general description of the project activities that directly or cumulatively, temporarily or permanently may threaten the physical, chemical and biological properties of the habitat utilized by Pacific coast salmon and their prey within the project area. The direct result of these threats is that the habitat functions of EFH may be eliminated, diminished or disrupted.

Potential impacts to Central California Coast steelhead due to the proposed action have been described in detail in the associated biological opinion. Most potential impacts to steelhead apply to Pacific Coast salmon EFH in the project area. LGRP impacts that may affect Chinook salmon EFH include:

- Structures and their operation associated with dewatering and flow diversion at project work areas may delay and block fish passage. Of particular concern is the likelihood that adult Chinook salmon will arrive at cofferdam sites before the cessation of construction on October 15, and find their upstream migration delayed or blocked.

- Project construction activities and vegetation management may degrade water quality and harm fish and filter-feeding macro-invertebrates on which Chinook salmon prey.

- Bank protection structures may damage riparian vegetation and degrade in-stream habitat features such as cover and negatively affect water temperature.

- Operation of the Alviso Weir facility may entrain outmigrating Chinook salmon smolts and trap them in the adjacent salt ponds.

CONCLUSION

NOAA Fisheries has determined that the proposed actions may adversely affect Pacific Coast salmon EFH in the action area. However, conservation measures included in the project description are expected to minimize and avoid impacts to Chinook salmon and their habitat. Conservation recommendations included in this EFH consultation, if fully implemented by the

Corps and the District, will further reduce potential adverse effects of the project. Proposed mitigation for the LGRP would improve habitat conditions for Chinook salmon.

EFH CONSERVATION RECOMMENDATIONS

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any federal or state agency action that would adversely affect EFH. All reasonable and prudent measures, term and condition 1a, and all terms and conditions implementing reasonable and prudent measures 2 through 4 contained in the incidental take statement of the preceding biological opinion, as well as the conservation measures proposed by the District for the LGRP, are relevant to Pacific Coast salmon EFH but have not been repeated here. NOAA Fisheries' EFH conservation recommendations specific to Chinook salmon are as follows:

1. In the event any adult Chinook salmon are observed in the lower Guadalupe River prior to September 1, unimpeded passage for adult Chinook salmon migrating upstream should be provided at LGRP construction sites. Additionally, NOAA Fisheries and the California Department of Fish and Game should be notified within 24 hours of the observation of the first adult Chinook salmon. The need for upstream passage should then be assessed cooperatively by the District and these two agencies.

2. The Corps and the District should coordinate with NOAA Fisheries, U.S. Fish and Wildlife Service, California Department of Fish and Game, San Francisco Bay Regional Water Quality Control Board and other agencies on planning for the interim and long-term management and restoration of Pond A8. Pond A8 and adjacent ponds (Ponds A5 and A7) could be restored to tidal marsh habitat and provide for the free passage of juvenile Chinook salmon to and from San Francisco Bay. The future tidal restoration of Pond A8 and adjacent ponds will eliminate the loss of fish with the overtopping of floodwaters at the Alviso Weir.

3. The Corps should work with the District to develop programs, design criteria, conservation measures and additional BMPs to protect EFH. These actions could include the identification and removal of culverts and other fish passage barriers to improve passage and flow conditions, development of biotechnical bank stabilization guidelines, and development of comprehensive riparian revegetation and monitoring plans.

4. The Corps and District should ensure that permits issued by their respective agencies for new projects in the Guadalupe River be subject, at minimum, to the guidelines presented in the City of San Jose's Riparian Corridor Policy Study (1999).

FEDERAL AGENCY STATUTORY REQUIREMENTS

The MSFCMA (section 305(b)(4)(B)) and federal regulations to implement the EFH provisions of the MSFCMA (50 CFR section 600.920(j)) require federal action agencies to provide a written response to EFH conservation recommendations within 30 days of their receipt. For this consultation, the federal action agency is the U.S. Army Corps of Engineers (Corps). A preliminary response is acceptable if final action cannot be completed within 30 days. The final response must include a description of measures proposed to avoid, mitigate, or offset the project's adverse impacts on EFH. If the response is inconsistent with NOAA Fisheries EFH conservation recommendations, the Corps must explain in writing why implementation of the conservation recommendations is not feasible.

CONSULTATION RENEWAL

The Corps must notify NOAA Fisheries and may need to reinitiate EFH consultation if either the proposed action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(k)).

LITERATURE CITED

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NOTICE TO PERMITTEE

Please use the forms below to report the dates when you start and finish the work authorized by the enclosed permit. Also if you suspend work for an extended period of time, use the forms below to report the dates you suspended and resumed work. The second copy is for your records. If you find that you cannot complete the work within the time granted by the permit, please apply for a time extension at least one month before your permit expires. If you materially change the plan or scope of the work, it will be necessary for you to submit new drawings and a request for a modification of your permit.
(cut out as needed) ----------

Date:_____

NOTICE OF COMPLETION OF WORK under Department of the Army permit No.24897S
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated April 24, 2003 to construct the LGRP on the Guadalupe River this is to notify you that the work was completed on _____.

Permittee: Santa Clara Valley Water District
Address: 5750 Almaden Expressway San Jose, CA 95118-3614

Date:_____

NOTICE OF RESUMPTION OF WORK under Department of the Army permit No. 24897S
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated April 24, 2003 to construct the LGRP on the Guadalupe River this is to notify you that work was resumed on _____.

Permittee: Santa Clara Valley Water District
Address: 5750 Almaden Expressway San Jose, CA 95118-3614

Date:_____

NOTICE OF SUSPENSION OF WORK under Department of the Army permit No. 24897S
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated April 24, 2003 to construct the LGRP on the Guadalupe River this is to notify you that work was suspended on _____.

Permittee: Santa Clara Valley Water District
Address: 5750 Almaden Expressway San Jose, CA 95118-3614

Date:_____

NOTICE OF COMMENCEMENT OF WORK under Department of the Army permit No. 24897S
TO: District Engineer, US Army Corps of Engineers, Regulatory Branch, 333 Market Street, 8th Floor, San Francisco, CA 94105-2197

In compliance with the conditions of the permit dated April 24, 2003 to construct the LGRP on the Guadalupe River this is to notify you that work was commenced on _____.

Permittee: Santa Clara Valley Water District
Address: 5750 Almaden Expressway San Jose, CA 95118-3614

STATE OF CALIFORNIA THE RESOURCES AGENCY GRAY DAVIS, GOVERNOR
DEPARTMENT OF FISH AND GAME
CENTRAL COAST REGION
(707) 944-5520
Mailing address:
POST OFFICE BOX 47
YOUNTVILLE CALIFORNIA 94599
Street address:
7329 SILVERADO TRAIL
NAPA CALIFORNIA 94558

File

April 30, 2003

Notification Number R3-2002-0732

Mr. Terry Neudorf
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3686

PROJECT MANAGEMENT
FILE COPY

1601 LAKE AND STREAMBED ALTERATION AGREEMENT

This agreement is issued by the Department of Fish and Game pursuant to Division 2, Chapter 6 of the California Fish and Game Code:

WHEREAS, the applicant Terry Neudorf / Santa Clara Valley Water District, hereafter called the Operator, submitted a signed NOTIFICATION proposing to substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed or lake of the following water: Guadalupe River, located in the Township 6S/7S and Range 1E/1W, in the County of Santa Clara, State of California; and

WHEREAS, the Department has determined that such operations may substantially adversely affect existing fish and wildlife resources including water quality, hydrology, aquatic or terrestrial plant or animal species; and

WHEREAS, the project has undergone the appropriate review under the California Environmental Quality Act; and

WHEREAS, the Operator shall undertake the project as proposed in the signed PROJECT DESCRIPTION and PROJECT CONDITIONS (attached). If the Operator changes the project from that described in the PROJECT DESCRIPTION and does not include the PROJECT CONDITIONS, this agreement is no longer valid; and

WHEREAS, the agreement shall expire on December 31, 2004; with the work to occur according to the Project Description and Conditions; and

WHEREAS, nothing in this agreement authorizes the Operator to trespass on any land or property, nor does it relieve the Operator of the responsibility for compliance with applicable Federal, State, or local laws or ordinances. Placement, or removal, of any material below the level of ordinary high water may come under the jurisdiction of the U. S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act;

THEREFORE, the Operator may proceed with the project as described in the PROJECT DESCRIPTION and PROJECT CONDITIONS. A copy of this agreement, with attached PROJECT DESCRIPTION and PROJECT CONDITIONS, shall be provided to contractors and subcontractors and shall be in their possession at the work site.

Failure to comply with all conditions of this agreement may result in legal action.

This agreement is approved by:

Robert W. Floerke
Regional Manager
Central Coast Region

cc: Kristine Atkinson
Carl Wilcox
Dave Johnston
Warden Shelton

STATE OF CALIFORNIA THE RESOURCES AGENCY GRAY DAVIS, GOVERNOR
DEPARTMENT OF FISH AND GAME
CENTRAL COAST REGION
(707) 944-5520
Mailing address:
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
Street address:
7329 SILVERADO TRAIL
NAPA, CALIFORNIA 94558

Notification Number: R3-2002-0732
Guadalupe River, Santa Clara County

Attn: Terry Neudorf
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3686

PROJECT DESCRIPTION and PROJECT CONDITIONS

Description

The Guadalupe River flows northerly from the Santa Cruz Mountains through San Jose and Santa Clara, California, and into Alviso Slough, which drains into Coyote Creek and South San Francisco Bay. The lower portion of the Guadalupe River no longer has the capacity to convey the 100-year flood flow with appropriate freeboard, due to accumulation of sediment and growth of vegetation in the channel, that has occurred since the flood capacity was last improved in the 1980's. The Santa Clara Valley Water District proposes to remove vegetation and sediment from the Guadalupe River bottom, construct floodwalls, raise existing levees, and construct depressed maintenance roads and ramps at bridges to re-establish 100-year capacity in the river, from I880 downstream to the Alviso Marina. In addition, the existing eastbound Rte 237 Bridge over the Guadalupe River will be replaced.

The following description subsections describe general definitions that pertain to this project, reach-by-reach descriptions, as well as a description of the replacement of State Route 237 bridge.

General Descriptions

Vegetation Management will be primarily conducted by hand or by light pressure machinery and the degree of management (i.e., aggressive, moderate, limited) would be related to established maintenance roughness values calculated for the design events. In general, unless otherwise specified, a minimum 6.0 meter (20 feet) buffer strip will be established on both sides of the low flow channel. Native riparian and wetland vegetation will be retained within the buffer strip. Non-native vegetation will be controlled by herbicide application and cutting within the buffer strip.

"Aggressive vegetation management" will involve the regular cutting of vegetation to less than 0.3 m (1 ft) from the inboard levee hinge to the inboard levee hinge. Shaded riverine aquatic habitat will not be disturbed.

"Moderate vegetation management" involves periodic removal of vegetation from the overbanks and inboard levee slopes. Flexible or herbaceous vegetation would be cut to less than 0.3 m (1ft) and will be re-cut when the vegetation exceeds 0.9 m (3ft) in height. When woody vegetation recruits exceed 1.5 m (5 ft) they will be cut to less than 0.3 m (1ft). Established woody vegetation (willows, cottonwoods, etc.) will be maintained so that overhanging branches that are at or less than 6m (2ft) above the channel invert and that are greater than 0.15 m (6 in) in diameter will be trimmed to maintain flow way

"Limited vegetation management" involves the removal of snags and debris.

Sediment and vegetation management activities will be conducted in the LGRP project area under the LGRP plan and under Stream Maintenance Program.

Floodwalls will be constructed of reinforced concrete. Floodwall heights will vary with a maximum height of approximately 1.22 m (4 ft) and will be constructed at the inboard hinge of the top of the levee. The floodwalls would be similar to Type 1 retaining walls and would require excavating at the top levee to place drilled piles or spread footings.

Material used to raise levees will be a composite of native material excavated from project activities and imported clean fill. Imported fill will comprise the majority of utilized fill as the project anticipates soils potentially impacted with elevated levels of mercury and will be unsuitable. Impacted soils will be removed and disposed of at an approved facility.

Maintenance access roads and access ramps will require minimum 5.5 m (18 ft) in width and will be surfaced with a 0.15 m (6 in) thick aggregate base. At bridges, all maintenance roads and ramps will be concrete paved.

Overbank areas include all areas from the toe of the inboard levees to the top of the banks of the low flow channel. Vegetation management in overbank areas will avoid SRA habitat.

Some outfalls will require increased armoring at the discharge point (i.e., a hardened surface comprised of rock revetment) to reduce bank erosion. A number of outfalls are to be protected and avoided by the contractor (Protect in Place). Minor outfalls refer to small diameter (450 mm [18 in] or less) culverts that would require limited structural modifications to accommodate the recommended project. Major outfalls indicate large diameter, greater than 450 mm [18 in] culverts, pumps station outfalls that would require complete relocation, reconstruction or substantial modifications, such as new headwalls, gates, or riprap installation to accommodate the recommended project. Only two outfalls will result in disturbance to wetlands and occur on the westbank in Reach C.

Reach Descriptions:
Reach A (I-880 to U.S. 101)will include floodwall construction; aggressive, moderate, and limited vegetation management avoiding a 15-foot riparian buffer on either side of the low flow channel; planting riparian vegetation; up to four rock weir invert stabilization structures; minor bank stabilization; and new maintenance roads and ramps. A 2-foot floodwall will be constructed on top of both banks from Highway 101 to 98 feet upstream. Aggressive vegetation management in the first 394 feet downstream of I-880, excluding the overlapping U.S. Army Corps of Engineers shaded riverine aquatic (SRA) mitigation area, involves regular cutting of vegetation

to a height less than 1 foot across the channel. Moderate vegetation management will occur from the Highway 101 Bridge crossing to the downstream end of the Project, and involves allowing trees to reach a height of 5 feet and herbaceous vegetation to reach a height of 1 foot. Limited vegetation management is permitted in the Corps' SRA areas on either side of the low flow channel and involves the removal of snags and debris only. Approximately 1.88 acres of riparian vegetation will be planted. Up to four rock weir stabilization structures will be installed at grade with the channel bed and banks, and are designed to provide fish passage at all flows.

A continuous depressed maintenance road will be constructed on the east bank between Highway 101 and the Airport Island Bridge. On the in-board bank of the depressed maintenance road, only rock slope protection (RSP) will be utilized. On the out-board bank of the depressed maintenance road; 6 lineal meters of concrete wingwall and 20 lineal meters of gabion mattress lining will be constructed immediately upstream of Highway 101; 100 linear meters of earth bank with mitigation revegetation plantings will be provided between Highway 101 and Airport Island Bridge; 12 lineal meters of concrete slope protection will be installed beneath the Airport Island Bridge. A ramp from top of bank upstream of the Airport Island Bridge to the depressed maintenance road will be constructed. On the in-board bank of the ramp, only RSP will be utilized to the 25-year flood event water surface. If construction is feasible, RSP will be utilized to the top of bank. If not, gabions will be constructed. Non-mitigation revegetation will be planted outside of the 100 feet upstream and downstream of bridges to the maximum extend practicable both from the hydraulic and planting capabilities. On the out-board bank, mattress gabion will be installed.

On the west bank, to provide continuous access for maintenance vehicles, ramps from the top of bank to depressed maintenance road underneath bridges will be constructed at upstream and downstream of Highway 101 and Airport Parkway Bridges. At Highway 101, on the in-board bank of the ramp, only RSP will be utilized to the 25-year flood event water surface. If construction is feasible, RSP will be utilized to the top of bank. If not, gabions will be constructed.

At Airport Parkway Bridge, the ramps will be aligned to utilize the entire District's right-of-way. The in-board bank of the ramps will be constructed to the flattest slope feasible and only RSP will be utilized to the 25-year flood event water surface. If construction is feasible, RSP will be utilized to the top of bank. If not, gabions will be constructed. Non-mitigation revegetation will also be planted outside of the 100 feet upstream and downstream of bridges to the maximum extend practicable both from the hydraulic and planting capabilities. On the out-board bank, gabions will be installed.

Reach B (U.S. 101 to Trimble Road)will include levee raising, levee setback, sediment and vegetation removal, planting riparian vegetation, maintenance access road improvements, and outfall modifications. Levees (both banks) will be raised using predominantly clay-type earth materials, most of which will be imported from offsite. in some portions to 1 foot above existing elevations. Downstream of U.S. 101, the west bank levee will be set back an additional 80 feet from its current location. To maintain channel capacity, periodic sediment removal (not a part of SMP) and moderate vegetation management will occur in the overbank areas. Periodic moderate vegetation management will occur in the overbank areas and inboard levee slopes, avoiding a 19.7-foot riparian buffer on either side of the low flow channel. Approximately 2.23 acres of riparian vegetation will be planted. Maintenance roads on top of the levees will be widened to

meet the minimum width requirement of 18 feet. Maintenance access road improvements include 0.15 m (6 inches) thick aggregate surfacing. Nine outfalls will be protected in place (ie: require no construction or modification and one minor outfall will require modification.

Reach C (Trimble Road to Montague Expressway) will include minor levee raising, moderate vegetation management, sediment removal, planting riparian vegetation, and maintenance access road improvements. Levees will be raised approximately 1.6 feet on both banks. Levees will be cleared and graded. Clean fill will be used to raise the levee and will be compacted. An approximately 100-foot wide overflow channel will be re-excavated on the east bench along side the low flow channel. Periodic sediment removal (included in the Stream Maintenance Program) will occur in the re-excavated overflow channel to maintain capacity. Periodic moderate vegetation management will occur in the re-excavated overflow channel and inboard levee slopes, avoiding a 19.7-foot riparian buffer on either side of the low flow channel. Approximately 2.36 acres of riparian vegetation will be planted. Maintenance roads on top of the levees will be improved, (widened where necessary and resurfaced with 0.15 m (6 inches) thick aggregate base) to meet the minimum width requirement of 18 feet. A new 18 ft wide depressed maintenance road will be constructed on the east bank Concrete maintenance ramps, approximately 100 m long, and depressed concrete maintenance roads will be constructed on both banks at Trimble Road (concrete roads already built by CSJ) and Montague Expressway.

Reach D (Montague Expressway to Hetch Hetchy Aquaduct) will include minor levee raising, vegetation and sediment removal, maintenance access road improvements, and outfall modifications. Levees will be raised 2.3 feet. Maintenance roads on top of the levees will be widened to meet the minimum width requirement of 18 feet. Overflow channels varying in width from 5 to 16 m will be re-excavated to remove accumulated sediment in the overbank areas. The excavated channels will be approximately 710 m long on the east bench and 200 m long on the west bench. Periodic sediment removal will occur in the re-excavated overflow channels to maintain capacity. Periodic minor vegetation management will occur in the areas outside the 100 to 150-foot riparian buffer areas. Only periodic limited vegetation management will occur in the riparian buffer area. Access ramps, (gravel paved) approx. 60 m long, will connect the top of levee to depressed maintenance roads immediately upstream of the Hetch-Hetchy aqueduct crossing; one east bank gravel-paved maintenance ramp will be constructed approx. 500 m downstream of Montague expressway; east and west bank gravel ramps will extend from the depressed maintenance roads up to the levee tops, and 100-120 m long concrete ramps will extend from top of levees down to depressed maintenance roads beneath Montague Expwy Bridge). Five major and five minor outfalls will require modifications.

Reach E (Hetch Hetchy Aquaduct to Tasman Drive) will include minor levee raising, vegetation and sediment removal, maintenance access road improvements, and outfall modifications. Levees will be raised 1.6 feet. wide Overflow channels, 7 to 16 m wide, will be re-excavated (725 m on east bench and 560 m on west bench) to remove accumulated sediment in the overbank areas. Periodic sediment removal will occur (included in SMP) in the re-excavated overflow channels to maintain capacity. Periodic minor vegetation management will occur in the areas outside the 100 to 150-foot riparian buffer areas. Only periodic limited vegetation management will occur in the riparian buffer area. Maintenance roads on top of the levees will be widened to meet the minimum width requirement of 18 feet. Approx. 400 m upstream of Tasman Drive Bridge, existing depressed maintenance roads on both sides of channel (approx. 350 m long) will be upgraded to 5.5 min width and gravel paved Approx. 40 m long access

ramps will be gravel paved and will connect the depressed maintenance roads to the top of levees , immediately downstream of Hetch Hetchy and 400 m upstream of Tasman Drive. New concrete paved depressed maintenance roads with 120 m long concrete ramps will be constructed on both banks to provide access beneath Tasman Drive. Two major and two minor outfalls will require modifications. Refer to the attached table for outfall construction descriptions and locations.

Reach F (Tasman Drive to State Route 237)will include replacing the eastbound span of SR 237, floodwall construction and levee raising, levee rehabilitation, vegetation management, maintenance access road improvements, and outfall modifications. The eastbound crossing at SR 237 will be replaced at a slightly higher elevation than the westbound crossing to increase flood capacity and freeboard. Because of lack of right of way needed to raise the existing levees, 1-m high floodwalls will be constructed of reinforced concrete along the inboard levee hinge of the first 1,969 feet of levees. The remaining levees will be raised on average 2.3 feet using clean fill and surfaced with aggregate base. Concrete paved, 5.5 m wide maintenance ramps (approx. 110 –120 m long) and depressed maintenance roads (70 m long) will be constructed at St Rte 237 and Tasman Drive. Sediment management has not been identified for this reach but aggressive vegetation management will be required at the beginning of each flood season throughout the reach outside of a 19.7-foot buffer along the low flow channel. Six major and two minor outfalls will require modifications.

Reach G (State Route 237 to the UPRR Bridge in Alviso),from SR 237 to the UPRR will include floodwall construction, vegetation and sediment removal, maintenance access road improvements including new construction of depressed maintenance roads, and outfall modifications. Because of the lack of right of way needed to raise the levees and to avoid wetland encroachment, floodwalls will be constructed on the inboard levee hinge. Sediment and vegetation will be removed to a depth of 3.28 feet for a width of 39.36 feet along the edge of the depressed maintenance roads (Vegetation will be removed by hand. Sediment removal will involve equipment to dredge material). Aggressive vegetation management through herbicide application (Roundup will be the principal herbicide used and will be applied with hand applicators) will be used to control the growth of dense tule vegetation in the remaining overbank areas. A 19.7-foot buffer along the low flow channel will be avoided. Depressed maintenance will be constructed along the toe of the existing levees to provide access to sediment and vegetation management areas and will be surfaced with 0.15 m (6 in) aggregate base. A 60 m long depressed maintenance road with a 25 m long gravel paved ramp will be constructed between UPRR Bridge and Gold Street Bridge, along north side of channel. Upstream of Gold Street, on northerly side of river, the depressed maintenance road will be about 340 m long, with a gravel paved ramp 400 m upstream of Gold Street. On the southerly side of river the depressed maintenance road will be approx. 700 m long, with gravel paved 25 m long ramps 130 m upstream of Gold Street and 100 m downstream of State Route 237. Three major and two minor outfalls will require modification.

The Baylands portion of the Project involves vegetation management, levee construction, 54 m long and 20 m long, by 0.5 m high, concrete floodwalls at top of levee, construction of an overflow weir opposite Alviso, levee repair, and pumping activities. Vegetation along approximately 738 linear feet of the east bank of Alviso Slough would be aggressively managed to lower floodwater elevations. An overflow weir would be constructed between Alviso Slough and Pond A8 to prevent flooding in the community of Alviso. The weir will be constructed of articulated concrete mats (ACM). The ACM at the top of levee will be covered with topsoil and

hydoseeded. Construction will require a staging area around the location of the weir to be cleared and dewatered if necessary [pond side] to allow construction equipment access to import materials and put in place). This overflow weir would be approximately 82 feet by 1,000 feet, and would be constructed on an existing levee that is currently overtopped during high flows. The weir will provide a hardened spillway for floodflows to overtop the salt pond levee at the same elevation as the existing levee surface and also protect the levee from erosion). The spillway will be designed to overtop flows into Cargill Salt Ponds A5, A6, A7, A8D, and A8W. The southerly levee of Pond A6 contains three low spots that allow rare flood flows to enter Pond A6 from Ponds A5 and A7. These low spots on the levee, cumulatively, are approximately 1300 feet long by 40 feet wide and will be armored with articulated concrete mats and backfilled with native soil, to prevent levee failure due to the potential overtopping. A pumping plan will be implemented after flooding to de-water critical environmental areas in the salt ponds. The water will be pumped back into Alviso Slough and Guadalupe Slough.

Bridge Description:
The operator proposes to replace the existing 8-span 71.0 meter long by 25.3 meter wide eastbound bridge with a new 9-span structure that would be 82.2 meters long by 33.9 meters wide. A portion of the new bridge, 4.8 meters wide, required for traffic handling during construction, will be demolished, resulting in a final new bridge width of 29.1 meters. The eastbound structure replacement will consist of two reinforced concrete abutments supported on piles, and eight pile-extension piers, providing support to a reinforced concrete slab bridge. The west bound bridge will remain in place.

Reinforced concrete depressed maintenance roads (5.5 meters wide) are proposed beneath the new eastbound and existing westbound bridges, adjacent to abutments. The easterly abutment of the existing westbound bridge is outside of the existing river east levee, therefore, excavation of the waterside portion of this levee is necessary to accommodate the revised channel shape, and the depressed maintenance road. A reinforced concrete floodwall, supported on a spread footing, will be beneath the existing westbound bridge to support the remaining portion of the east levee. This floodwall will be aligned with the east abutment of the new eastbound bridge.

Reinforced concrete maintenance ramps, 5.5 meters wide and varying in length from 95 to 110 meters, will connect the depressed maintenance roads at each upstream and downstream corner of the bridges to the tops of the east or west river levees. Construction of these maintenance ramps will require excavation of existing levee material and construction of reinforced concrete retaining walls supported on pile or spread footing foundations.

Excavation would be required in the channel (approximately 3,300 cubic meters) to construct the bridge foundations, the depressed maintenance roads and the pier webwalls. Excavation of the existing levees (approximately 1,900 cubic meters) would be necessary to construct the proposed maintenance ramps. Approximately 2,600 cubic meters of soil fill would be required to complete new waterside levee slopes, below the new maintenance ramps.

Approximately 2,200 ton (1,144 cubic meters) of rock slope protection (RSP - 1/2 ton class by 1.5 meter thick) will be placed on the river bank, from the waterside edge of each depressed maintenance road to 2 meters beyond the pier nearest the maintenance road (total width of RSP approximately 5 meters). The RSP will extend 10 meters upstream of the new eastbound bridge and 10 meters downstream of the existing westbound bridge.

In addition, the two 48-inch CMP culverts connecting the VTA Mitigation Site to the river @ the northwest quadrant of the project area, will be extended approximately 6 meters towards the river centerline to accommodate a maintenance ramp. The existing sacked concrete slope protection around these pipes would be replaced by approximately 384 ton (200 cubic meters)of 1/2 ton RSP placed on the new levee slope bank.

Construction of the new bridge will be accomplished in 3 stages. In the first stage, the existing traffic lanes would be shifted to the southern portion of the existing bridge, after which the northern portion of the bridge would be removed. The demolition would include the bridge deck and the pile extensions and "webwalls" which span between the existing piles, down to an elevation of a few feet below the existing ground surface. Shallow excavation of the ground at the pile locations would be necessary for removal of the existing piles and "webwalls". Access to, and operation of construction equipment at, the channel surface would be necessary for removal of the existing bridge. Demolition would be conducted so that debris would not be allowed to fall into the river. All demolished materials would be removed from the project site.

Upon completion of the demolition process, new piles would be driven in line with the piles just removed. Access to the river channel for the pile-driving rig would be necessary. Upon completion of this substructure work, temporary supports for the concrete deck pour would either be placed in the channel bottom or attached to the new pile extensions. The deck would be poured and the temporary supports removed, when the concrete has hardened sufficiently.

In the second stage of construction, traffic would be shifted to the newly built structure. The remaining portion of the existing bridge would then be removed and the rest of the new bridge constructed in a fashion similar to that described above. The two halves of the structure would be subsequently connected by a closure pour, after which the temporary supports would be removed. New "webwalls" would be constructed at all eight new piers of the eastbound bridge and at one westbound bridge pier, west of the new floodwall.

A third construction stage would include demolition of the northerly 4.8 meters of the new bridge, including piers. Following this work, the depressed maintenance roads and ramps would be constructed, utilizing conventional excavation, backfill and grading equipment and techniques.

Two of the eight piers supporting the bridge are currently within the low flow channel of the river bed. Prior to removal of these two existing piers and construction of the new ones, dewatering of the low flow channel immediately adjacent to the piers would be necessary. The contractor would dewater by driving sheet piles around the foundation work area, or by creating a temporary waterway cut along the river bed outside of the immediate work area, from 30 meters upstream to 30 meters downstream of the new and existing bridges. The temporary waterway would be approximately the same width and depth as the existing low flow channel. After construction, the low flow channel would be re-established in its original location and size. Earth removed would be replaced and compacted to 85 percent relative compaction after construction. No impacts to the existing low flow channel are anticipated during construction of the maintenance ramps and roads. Dewatering of groundwater required for construction would be accomplished in accordance with the pollution control and water quality requirements in the construction documents and RWQCB Order.

The operator proposes to remove all vegetation from 30 meters upstream of the new eastbound bridge to 30 meters downstream of the existing westbound bridge. In addition, the existing levee sideslopes and toes at the four corners of the bridges will be cleared of vegetation for a length of approximately 100 meters upstream and downstream of this 30-meter limit, to facilitate maintenance ramp construction. The total area of temporary and permanent impacts for bridge and maintenance ramp/road construction @ Rte 237 is approximately 1.9 hectares (4.6 acres), when tops of banks are included. The eight new piers for the eastbound bridge constructed within the river channel would be 34.5 meters long and 0.45 meter wide each. They would together permanently impact 124 square meters of river bed (this is essentially a similar impact as the existing eastbound bridge). The depressed maintenance roads beneath the bridges, with RSP, would be approximately 10.5 meters wide by 75 meters long, or approximately 1,575 square meters of permanent impact for both roads. Levee fill needed to construct the new maintenance ramps would produce a permanent impact on approximately 950 square meters of existing river bed.

No impacts to woody vegetation would occur from this bridge replacement project. The total impact area noted above is dominated by ruderal vegetation that is regularly disturbed by channel maintenance activities, and dominated by invasive, non-native species. The operator plans to cover all disturbed levee slopes with an erosion control hydroseed mix of native grasses.

This bridge project also includes the temporary and permanent relocation of an existing San Jose Municipal Water Service 10-inch diameter pipe, that is attached to the existing eastbound bridge. Excavation necessary to relocate the pipe will be at the tops of the both banks, approximately five feet deep, and located adjacent to the excavation of the tops of the banks for the new bridge abutments. Removal and replacement of existing electrical, irrigation and communication utility ducts on the eastbound bridge will also be required. No channel excavation or fill would be required for these utility relocations.

Conditions

1. In order to avoid the primary migration and spawning periods of steelhead, all work below the top of bank ("in-channel construction") will occur between May 1 and October 15. Since outmigrating juvenile steelhead may still be present in the river during the initial part of this work window, construction activity can proceed in the month of May only if average daily stream temperatures at a location to be approved of by NOAA Fisheries have exceeded 68°F for at least five consecutive days. Any construction that does occur prior to June 1 will not involve dewatering, flow diversion, or work within the wetted stream. Cofferdam construction associated with in-channel work occurring between September 1 and October 15 will provide uninterrupted upstream passage around construction sites and dewatered areas. Specific stream monitoring methods and reporting requirements will be coordinated with NOAA Fisheries and the California Department of Fish and Game (DFG). Revegetation work is not confined to the May 1-October 15 work window.

2. If any adult Chinook salmon arrive at the coffer dam sites before the end of the construction (before October 15), upstream passage for Chinook salmon shall be provided through or around construction sites from September 1 through October 15.

3. If non-listed fisheries or non-listed native aquatic vertebrates are present when cofferdams, water bypass structures, and silt barriers are to be installed, a fish and native aquatic vertebrate relocation plan shall be implemented to ensure that fish and native aquatic vertebrates are not stranded. Relocation efforts will be based on the District's Fish Relocation Guidelines.
a) In non-tidal channels, where water is to be diverted, prior to the start of work or during the installation of water diversion structures, non-listed native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual project sites when site conditions preclude reasonably effective operation of capture gear and equipment.
b) Aquatic invertebrates will not be transferred (other than incidental catches) because of their anticipated abundance and colonization after completion of the repair work.

4. Qualified biologists may take and relocate freshwater fishes and invertebrates, excluding standard exceptions as listed in the *sportfishing* regulations. You may not handle any of the fully protected species listed in Fish and Game Code Section 5050. Seasons and size limits shall not apply. Specimens of threatened or endangered species inadvertently taken shall be immediately released and reported to the DFG's Habitat Conservation Planning Branch in Sacramento at (916) 653-4875, and to Ms. Kristine Atkinson at 831-427-2638 within two business days.
a) Authorized methods of take are hand, seine, dip net, or minnow trap when marked with the permit number.
b) You may electrofish when appropriate. This method of take is not permitted for collections in areas that might affect species listed under the California Endangered Species Act (CESA) or the Federal Endangered Species Act (ESA)
c) The methods of take in items "a" and "b" above are not permitted for collections that could result in direct or indirect capture of any species listed under CESA or ESA, nor are collections permitted within critical habitat of any species listed under CESA or ESA, unless permittee has in possession while collecting a Fish and Game Code Section 2081 Memorandum of Understanding (MOU) pursuant to CESA, or a Federal permit for collections in areas that might affect species listed under ESA, or both an MOU and a permit for species listed under both CESA and ESA that provide for such collections. Any take of steelhead (*Onchorynchus mykiss*)or California red-legged frogs (*Rana aurora draytonii*), both species Federally listed as "threatened," shall require written approval by Section 7 or 10 consultation under ESA and such approval shall be in possession during collection. Fall-run chinook salmon (*Onchorynchus tshawytscha*), a California species of special concern, require written approval from DFG prior to relocation and such approval shall be in possession during collection. All MOUs or permits are in addition to written authorization for all collections from the DFG Environmental Scientist responsible for the area of collection.
d) A monthly report shall be sent to the Environmental Scientist of any and all collections made under the authority of this Letter of Permission. The report shall include the location, date, time and duration of the collections; the release location and time; the species and numbers of each species collected; and an estimate of any short-term/immediate mortalities that resulted from the rescue. If more than 50 individuals of

all aquatic species combined are rescued per day or location, then best estimates of the number of individuals rescued per species can be substituted for actual counts in the report. The report may be sent to Ms. Atkinson at Post Office Box 999, Santa Cruz, CA 95061-0999; or via email at katkinson@dfg.ca.gov; or by fax to (831) 427-2638 (call first to arrange fax hookup).

c) This Stream Alteration Agreement (SAA) shall be in your possession during all rescues. It shall be valid during the time period for completing work subject to the SAA # R3-2002-0732 and shall expire with the SAA on December 31, 2004. If there are any questions regarding this authorization, please contact Ms. Kristine Atkinson, Environmental Scientist, at (831) 427-2638 or Mr. Kevan Urquhart, Senior Fisheries Biologist, at (831) 649-2882.

5. Any activity that temporarily diverts flow from any segment of the river shall require implementation of the following measures:
   a) Before flow is diverted culverts and siphons shall be in place so that the flow to river segments downstream from the construction site shall not be interrupted.
   b) Flow shall be incrementally diverted from the affected river segment at the upstream boundary with diversion progressively increasing over a 4 hour period in the following increments: 50 percent, 75 percent, 90 percent, and 100 percent. Incremental reduction in flow shall allow fish in the affected areas to move downstream.
   c) All native aquatic vertebrates shall be removed by a qualified biologist prior to dewatering. Native aquatic vertebrates shall be removed from pools remaining after flow is diverted from the river segment and shall be relocated to a location (in the same watershed) deemed appropriate by a qualified biologist.

6. When work in a flowing stream is unavoidable, the entire stream flow shall be diverted around the work area by a barrier, temporary culvert, and/or a new channel capable of permitting upstream and downstream fish movement. Construction of the barrier and/or new channel shall normally begin in the downstream area and continue in an upstream direction, and the flow shall be diverted only when construction of the diversion is completed. The water diversion plan shall allow stream flows to gravity flow around or through the work site using temporary culverts or stream flow is pumped around the work site using pumps and screened hoses. Coffer dam construction shall be adequate to prevent seepage into or from the work area. Coffer dams and/or in-channel berms shall be constructed of river gravel with fines content that is less than 15%. Fines are defined as material that is able to pass through a #20 sieve. Coffer dams shall be installed both upstream and downstream not more than 50 feet from the extent of the work area. The entire work area shall be dewatered. The enclosure and the supportive material shall be removed when the work is completed and the removal shall normally proceed from downstream in an upstream direction. Normal flows shall be restored to the effected stream immediately upon completion of work at that location.

7. When any dam (any artificial obstruction) is being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream to maintain fishlife below the dam persuant to Fish and Game Code Section 5937.

8. A qualified fisheries biologist shall monitor coffer dam construction to ensure the take of

steelhead does not occur.

9. The project site has been identified as an area that is potentially inhabited by the a species federally listed as threatened, the California red-legged frog (CRLF), and by three species Federally and State listed as endangered, the salt marsh harvest mouse, the California Clapper Rail, and the California Least Tern. The operator is required to comply with all applicable state and federal laws, including the California and Federal Endangered Species Acts. This agreement does not authorize the take of any state or federally listed species. Liability for the take or incidental take of such listed species remains the responsibility of the Operator for the duration of the project. Any unauthorized take of such listed species may result in the prosecution and nullification of the Agreement.

10. Knowledgeable and experienced biologists approved by the Department and retained by the *District* as biological monitors, shall be present during all Project activities within areas of Salt Marsh Harvest Mouse (SMHM) and California Clapper Rail (CCR) habitat to help avoid mortality or injury to individual SMHM and CCR, and to *minimize* disturbance to the habitat. A biologist who holds or is named on a valid 10(a)(1)(A) Federal Scientific Collection permit issued by the Service or who is specifically named in the U.S. Fish and Wildlife Service Biological Opinion for this project, for handling SMHM and CCR (hereinafter referred to as "permitted biologist") shall be the only biologist allowed to handle SMHM and CCR. Non-permitted biological monitors may be present to help monitor maintenance activities. All biological monitors shall provide quality control and quality assurance for implementation of the measures to avoid mortality or injury to SMHM and CCR. The biological monitors shall ensure compliance with the measures provided in this Agreement. The biological monitors shall inspect each activity area daily immediately before activities begin and continually monitor in advance of the work crew. At any time that a SMHM or CCR is found in the work area, work shall cease until the animal moves out of the work area.

11. The District and its contractors and agents working in SMHM and CCR habitat shall provide biological monitors with the express authority to order any immediate changes in Project activities that are necessary to avert a risk of imminent mortality or injury to SMHM and/or CCR, and to stop any activity that cannot be or has not been brought into immediate compliance. The Department shall be notified the same day or within 24 hours of circumstances that led biological monitors to halt work or to otherwise avert threatened mortality or injury to SMHM and/or CCR.

12. One biological monitor shall be present on a continuous basis for each of the following activities in SMHM and/or CCR habitat:

    a. Any earth moving activity, including but not limited to excavation, boring, drilling, or placement of fill.
    b. Movement of any equipment larger than a pickup truck.

13. A biological monitor shall inspect underneath any vehicle for SMHM (in areas where SMHM may occur) that is parked for 30 minutes or more immediately prior to moving the vehicle.

14. The District, its contractors and agents, shall conduct an orientation program for all persons who will work in SMHM and CCR habitat. The program shall consist of a brief presentation from a permitted biologist, knowledgeable about the biology of the SMHM and CCR. The education program shall include a discussion of the biology of the SMHM and CCR, the habitat needs of these species, and their status under California Endangered Species Act and the Fish and Game Code. A fact sheet containing this information shall also be prepared and distributed. Upon completion of the orientation, employees shall sign a form stating that they attended the training. These forms shall be submitted to the Department.

15. Personnel who detect any mice or CCR on site shall immediately report their finding to a biological monitor. The biological shall determine if the reported mouse is a SMHM. If the biological monitor determines that the detected mouse is a SMHM, or if a CCR has been detected then work shall cease until the animal moves out of the work area.

16. If the District, or any of its employees, contractors or agents kills or injures an individual SMHM or CCR, or finds any such animal dead or injured, project activities in the habitat shall immediately cease and the Department and Service shall be notified within 30 minutes of the discovery.

17. Any dead or injured animal shall be turned over to the Department, the Service or its agent.

18. A written report detailing the date, time, location, and general circumstances under which a dead or injured individual SMHM or CCR was found shall be submitted to the Department and the Service no later than three (3) business days following the incident.

19. All biological monitors shall be supplied with cellular phones for the purpose of efficient communication in SMHM and CCR habitat.

20. The levee construction activity site shall be surveyed by qualified biologists for nesting birds in conformance to the USFWS Clapper Rail protocol no more than 30 days prior to starting the levee construction activities. In addition, formal surveys shall be conducted for California Least turn and snowy plover 30 days prior to starting levee construction activities. In areas where nesting birds are found or likely to occur, the construction period shall be modified so that work is not done during active nesting in the area and/or appropriate buffers have been established in consultation with a qualified biologist, the Department, and the USFWS.

21. Prior to bridge replacement construction, a survey shall be conducted by a qualified biologist for bats and birds. If bats or birds are found to be nesting on the bridge to be replaced, work on the bridge operations shall cease. No bats or birds shall be disturbed without specific notice to and consultation with the Department. The Department reserves the right to provide additional provisions to this Agreement designed to protect bats and birds which may be roosting/ nesting on the bridge. The survey results shall be reported in writing to the Department.

22. Prior to construction activities, a survey shall be conducted by a qualified biologist for

nesting raptors. If raptors are nesting, there shall be no impacts to habitat within 250 feet of the raptor nests trees during the nesting season (01 February-01 August). District Guidelines on Migratory Bird Treaty Act, in addition, shall be followed unless otherwise specified in this Agreement. The survey results shall be reported in writing to the Department.

23. Within 48 hours prior to beginning spraying and then commencement of mowing operations, a qualified biologist shall survey the work area for western pond turtles. If any turtles are found, they shall be immediately relocated to portions of the river that will remain undisturbed and are at least 100 meters from any proposed disturbance.

24. Prior to project construction, protocol burrowing owl surveys shall be conducted by a qualified biologist during the nesting season. If burrowing owls are observed on site, there shall be no impacts to any habitat within 250 feet of the nest burrow until the end of the nesting season in order to minimize the chance of take. Habitat mitigations will be required for any impacts to burrowing owl habitat. Preconstruction surveys shall be conducted within two (2) weeks prior to any ground disturbing activities on the site regardless of whether or not nesting owls were observed during the protocol surveys.

25. A qualified biologist (familiar with the sensitive species that could be present at the Guadalupe River project sites) shall ensure that no sensitive plants and communities are present in areas where vegetation will be impacted prior to construction activities. All sensitive plants shall be surrounded by orange fencing. The surveying shall be done within 30 days before construction begins.

26. If a stream channel has been altered during operations, its low flow channel shall be returned as nearly as possible to its natural state without creating a future bank erosion problem. The gradient of the streambed shall be as nearly as possible to the same gradient as existed prior to disturbance.

27. Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.

28. Gabion baskets shall not be utilized below the ordinary high water line.

29. Erosion control measures shall be utilized throughout all phases of the operation where sediment runoff from exposed slopes threatens to enter waters of the State. At no time shall silt laden runoff be allowed to enter waters of the State. At no time shall silt runoff be allowed to enter the stream or be placed where it may enter the stream.

30. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents, shall be located outside of the stream channel and banks. Stationary equipment such as motors, fuel-powered pumps, generators, compressors, and welders, located within or adjacent to the streams shall be positioned over drip pans. Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life. Vehicles shall be moved away from the stream prior to refueling and lubrication.

31. Wash water containing mud or silt from aggregate washing or other operations shall not be allowed to enter a lake or flowing stream.

32. Silty/turbid water from the excavation and/or project activities shall not be discharged into the stream, lake, or into the storm drains. Such water shall be pumped into a holding facility or into a settling pond located in flat stable areas outside of the stream channel, or sprayed over a large area outside of the stream channel or lake to allow for natural filtration of sediments. At no time shall turbid water from the settling ponds be allowed to enter back into the stream channel until water is clear of silt.

33. Turbidity levels within all streams and drainages on the site shall not exceed 50 NTU's over the background levels.

34. Poured concrete shall be excluded from the wetted channel for a period of 30 days after it is poured. During that time the poured concrete shall be kept moist, and runoff from the wet sacked concrete shall not be allowed to enter the live stream. Commercial sealants (e.g. Deep Seal, Elasto-Deck BT Reservoir Grade) may be applied to the poured concrete surface where difficulty in excluding water flow for a long period of time may occur. If sealant is used, water shall be excluded from the site until the sealant is dry.

35. All concrete debris and anthropogenic trash resulting from this Project shall be removed from the bed, bank, and channels.

36. The herbicide used shall be Aquamaster. Application shall be in accordance with the EPA publication entitled *Protecting Endangered Species: Interim Measures for use of Herbicides in Santa Clara County.* All herbicide use shall be completed by October 31 and no spraying shall take place if rain is forecast within 72 hours.

37. Mowing shall be carried out by the use of low pressure mechanized equipment operating in the channel or by the use of hand tools.

38. Machinery, including hand tolls, shall not be fueled or maintained in the channel; all equipment shall be removed from the channel before being fueled or serviced.

39. The portion of the channel within 6 meters of the low flow channel shall not be sprayed, mowed, or otherwise disturbed, within the exception of exotic vegetation removal in reaches A, B, and C as noted in the Project Description above.

40. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. Impacted riparian vegetation shall be replaced on-site at a minimum 3:1 ratio (replacement: loss). The Proposed Project is expected to impact approximately 2.16 acres of riparian vegetation and therefore a minimum of 6.48 acres of on-site riparian mitigation shall be provided. On-site mitigation areas shall be implemented as stated in the Lower Guadalupe River Protection Project Mitigation and Monitoring Plan (MMP)(August 07, 2002). The Reach A (located between U.S. 101 and Airport Parkway) mitigation area shall include planting riparian vegetation on the east and west banks of the river within 15 feet of the low-flow channel and planting the bank and lower

floodplain associated with the levee setback area on the east bank (between U.S. 101 and the Airport Island Bridge). A minimum of 1.88 acres of riparian mitigation shall be implemented at Reach A. The Reach B (located between Trimble Road and U.S. 101) mitigation area shall include planting on the created flood plain and the lower one-third of the setback levee. A minimum of 2.23 acres of riparian mitigation shall be implemented at Reach B. The Reach C (located between Montague Expressway and Trimble Road) mitigation area shall consist of 18 planting areas, totaling 2.37 acres.

41. Impacts to wetlands shall not exceed the minimum necessary to complete operations. Impacted wetlands shall be replaced on-site at a minimum 2:1 ratio (replacement: loss) for permanent impacts and a minimum 1:1 ratio for temporary impacts. The Proposed Project will permanently impact 0.43 acres of wetlands and temporarily impact 3.34 acres of wetlands. Mitigation areas shall be implemented as stated in the Lower Guadalupe River Protection Project Mitigation and Monitoring Plan (MMP) (August 07, 2002).

42. As per e-mail from Terry Neudorf, Santa Clara Valley Water District (April 4,2003) the District's contractor removed an additional 2.04 acres in the Fall of 2002, under Streambed Alteration Agreement R3-2002-0821. The District will assess the recovery of the unauthorized vegetation clearing and report to the CDFG within 4 months of the date of this agreement on the health and vigor of vegetation in the affected area and its use by wildlife in comparison to unaltered adjacent areas. If the area of unauthorized clearing has not recovered to its pre-clearing condition, the District will compensate for the loss of habitat value by restoration of up to 2 acres of brackish tidal marsh habitat within the approximately 3.50 acres of existing upland habitat that is currently dominated by ruderal vegetation that will be excavated on the east side of the overflow weir downstream of the UPRR bridge. Soil excavation will result in an increase of 3.50 acres of tidal freshwater marsh habitat in the project area. This area is currently higher in elevation than the adjacent tidal marsh. Following excavation, this area will be lowered to an elevation similar to the tidal marsh zone and is expected to become colonized by wetland vegetation (i.e., tule, cattail, burreed, and California bulrush). The amount of replacement habitat will be determined by comparing the habitat quality of the cleared area, condition of vegetation and wildlife use, against adjacent unaltered habitat. The amount of compensation habitat will be based on the percentage difference between the cleared and unaltered habitat. If compensation is necessary, the District will monitor the area following sediment removal to ensure that the appropriate quantity of native wetland vegetation colonizes the new marsh zone. If marsh vegetation does not readily colonize the area the District will consult with DFG to determine an appropriate remediation method.

43. Boundaries of vegetation to be removed shall be clearly marked (employ flagging or stakes) so that it is clear to the contactor what is to be removed.

44. Revegetation and replacement plantings shall consist of locally-obtained, native species that are suitable ecologically with the existing native plants.

45. Restoration shall include the revegetation of stripped or exposed areas. Vegetation shall be adequately watered from a source other than the creek (no diversions) and/or planted during the winter rainy season (October 15-February 15).

46. All sensitive plants and communities and their buffer zones shall be surrounded by habitat screen of orange safety fencing. The buffer zone width may vary depending on the location, type of plant/community and type of construction work in the area, and shall be determined by a qualified biologist.

47. Non-native invasive plant species (such as Cape ivy and Arrundo) removed during this project shall be bagged and appropriately disposed of in a landfill. It shall not be used in

the composting or left otherwise exposed in or around the project site.

48. Revegetation monitoring shall be conducted annually as follows:

a. The performance standard for riparian vegetation is 80% canopy cover of native trees and shrubs within planting areas in Reaches A, and C by year 5, and 80% canopy cover of native trees and shrubs within planting area B by year 10. Volunteer native tree and shrubs will be included in the determination of percent cover.

b. The District shall ensure that plant survival is sufficient throughout the first 5 years (10 years for Reach B) of the establishment period to ensure that the year 5 (year 10 for Reach B) performance standards are achieved. The District shall monitor the mitigation areas during the first 5 years (10 years for Reach B) following initial plant installation and shall summarize the results in annual monitoring reports. If during the monitoring period the mitigation areas are not progressing toward the year 5 (year 10 for Reach B) performance standard, the District shall develop an Adaptive Management Program, as part of the Adaptive Management Team (which includes representatives of the resource agencies) process, to evaluate the mitigation areas and monitoring results, and recommend appropriate remedial measures.

49. As per the Lower Guadalupe River Protection Project Mitigation and Monitoring Plan (MMP) (August 7, 2002), an annual monitoring report shall be submitted to the Department for the duration of mitigation monitoring no later than December 1 of the following year after the Fall monitoring.

50. Equipment that minimizes disturbance to the streambed shall be used. Appropriately-tired vehicles, either tracked (scarification) or wheeled (compaction), shall be used depending on the situation.

51. Building materials and/or construction equipment shall not be stockpiled or stored where they could be washed into the water or where they will cover aquatic or riparian vegetation.

52. Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake, by Operator or any party working under contract, or with the permission of the Operator, shall be removed immediately.

53. No pets shall be permitted to be at the site during the construction.

54. If the Operator finds more time is needed to complete the authorized activity, the work period may be extended on a day-to-day basis by the local Department of Fish and Game representative who reviewed the project.

55. A copy of this agreement must be provided to the Contractor and all subcontractors who

work within the stream zone and must be in their possession at the work site.

56. If, in the opinion of the Department, conditions arise, or change, in such a manner as to be considered deleterious to the stream or wildlife, operations shall cease until corrective measures approved by the Department are take.

57. Department personnel or its agents may inspect the work site at any time.

Amendments and Renewals

If the Operator needs more time to complete the authorized activity, the work period may be extended on a day-to-day basis by Kristine Atkinson at 831-427-2638, or, alternatively, to the Yountville office at 707-944-5520.

A copy of this agreement must be provided to the contractor and all subcontractors who work within the stream zone and must be in their possession at the work site.

Building materials and/or construction equipment shall not be stockpiled or stored where they could be washed into the water or where they will cover aquatic or riparian vegetation.

Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake, by Operator or any party working under contract, or with the permission of the Operator, shall be removed immediately.

The contractor shall not dump any litter or construction debris within the riparian/stream zone. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.

Department personnel or its agents may inspect the work site at any time.

The Operator is liable for compliance with the terms of this Agreement, including violations committed by the contractors and/or subcontractors. The Department reserves the right to suspend construction activity described in this Agreement if the Department determines any of the following has occurred:

A). Failure to comply with any of the conditions of this Agreement
B). Information provided in support of the Agreement is determined by the Department to be inaccurate.
C). Information becomes available to the Department that was not known when preparing the original conditions of this Agreement (including, but not limited to, the occurrence of State or federally listed species in the area or risk to resources not previously observed)
D).The project as described in the Agreement has changed or conditions affecting fish and wildlife resources change.

Any violation of the terms of this Agreement may result in the project being stopped, a citation being issued, or charges being filed with the District Attorney. Contractors and subcontractors may also be liable for violating the conditions of this agreement.

Amendments and Renewals

The Operator shall notify the Department before any modifications are made in the project plans submitted to the Department. Project modifications may require an amendment or a new notification.

This Agreement is transferable to subsequent owners of the project property by requesting an amendment.

To renew the Agreement beyond the expiration date, a written request for a renewal must be submitted to the Department (1600 Program, Post Office Box 47, Yountville, California 94599) for consideration at least 30 days before the Agreement expiration date. A renewal requires a fee. The Fee Schedule can be obtained at www.dfg.ca.gov/1600 or by phone at (707) 944-5520. Renewals of the original Agreement are issued at the discretion of the Department.

To modify the project, a written request for an amendment must be submitted to the Department (1600 Program, Post Office Box 47, Yountville, California 94599). The fee for an amendment is one-half (½) of the original fee. Amendments to the original Agreement are issued at the discretion of the Department.

Please note that you may not proceed with construction until your proposed project has undergone CEQA review and the Department signs the Agreement.

I, the undersigned, state that the above is the final description of the project I am submitting to the Department for CEQA review, leading to an Agreement, and agree to implement the conditions above required by the Department as part of that project. I will not proceed with this project until the Department signs the Agreement. I also understand that the CEQA review may result in the addition of measures to the project to avoid, minimize, or compensate for significant environmental impacts:

Operator's name (print): DAVID J. CHESTERMAN, GUADALUPE WATERSHED MANAGER

Operator's signature:

Signed the 30th **day of** April, **2003**

For Department Use Only					
Notification Number:		Date Received:		Date Completed:	
Fee Enclosed?	☐ Yes $		☐ No		
Action Taken/Notes:					

Ck #726423
$1390.50
Santa Clara Valley Water Dist.

R3-2002-0732
Ck Rec'd 8-27-t
Shelton
Baldwin
Atkinson

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

(See attachment/enclosure for instructions)

Notification Type

[X] 1601 (Public)	[ ] Timber Harvest Plan	(No. _____)
[ ] 1603 (Private)	[ ] Commercial Gravel Extraction	(No. _____)
	[ ] Water Application	(No. _____)

Applicant Information

	Name	Address	Telephone/FAX
Applicant:	Santa Clara Valley Water District Contact: Terry Neudorf	5750 Almaden Expressway San Jose, CA 95118-3686	Business: 408/265-2607 ext. 2695 Fax: 408/268-7687
Operator:	To be determined.		Business: Fax:
Contractor: *(if known)*	To be determined.		Business: Fax:
Contact Person: *(if not applicant)*	Serge Stanich Jones & Stokes	2600 V Street Sacramento, CA 95818	Business: 916/503-6681 Fax: 916/503-6680
Property Owner:	Santa Clara Valley Water District	5750 Almaden Expressway San Jose, CA 95118-3686	Business: 408/265-2607 Fax: 408-268-7687

Project Location

Location Description:	The Lower Guadalupe River Flood Control Project (LGRP) is located along the lower 6.5 miles of the Guadalupe River, between Interstate 880 and the Union Pacific Railroad bridge in the cities of San Jose and Santa Clara. The LGRP is downstream of 2 flood protection projects: the upper Guadalupe River project and the downtown Guadalupe River project.

County		Assessor's Parcel Number		
Santa Clara County				
USGS Map	**Township**	**Range**	**Section**	**Latitude/Longitude**
San Jose West	6S, 7S	1E, 1W	None	
Milpitas	6S	1W	None	
Name of River, Stream, or Lake:	Guadalupe River			
Tributary To?	Alviso Slough			

e of Applicant: Santa Clara Valley Water District

Project Description							
Project Name:	Lower Guadalupe River Flood Protection Project						
Proposed Start Date:	5/2003	Proposed Completion Date:	12/2004	Project Cost:		Number of Stream Encroachments: (Timber Harvest Plans Only)	
Describe project below:							

Project Description

The Santa Clara Valley Water District (District) proposes to construct the Lower Guadalupe River Flood Protection Project (LGRP) along the lower 10.5 kilometers (km) (6.5 miles) of the Guadalupe River, primarily located between Interstate 880 and the Union Pacific Railroad (UPRR) bridge in the cities of San Jose and Santa Clara. Some additional work would be done immediately downstream of the UPRR bridge along the Alviso Slough in the Baylands area. Through the LGRP, the District proposes to modify previous flood-control improvements initiated in 1982 and 1995 on the lower Guadalupe River. These modifications would restore the flood conveyance capacity of the existing channel and provide additional capacity to convey floodflows of approximately 481 cubic meters per second (cms) (17,000 cubic feet per second [cfs]) at the upstream limit of the project and 520 cms (18,350 cfs) at the downstream limit during a design flood event. The proposed modifications would balance the need for flood-control structures and channel maintenance with the goal of protecting and enhancing environmental conditions and public access.

For the purposes of evaluation and discussion, the Project Area is divided into 7 reaches. These reaches are (from upstream [south] to downstream [north]):

- reach A: I-880 to U.S. Highway 101 (U.S. 101),
- reach B: U.S. 101 to Trimble Road,
- reach C: Trimble Road to Montague Expressway,
- reach D: Montague Expressway to the Hetch Hetchy Aqueduct,
- reach E: Hetch Hetchy Aqueduct to Tasman Drive,
- reach F: Tasman Drive to State Route (SR) 237,
- reach G: SR 237 to the UPRR bridge in Alviso, and

Baylands mitigation features are located downstream of the UPRR bridge.

The major elements of the LGRP include:

- minor bank modification at the I-880 bridge approach in reach A;
- construction of 4 grade control weirs in the reach-A low-flow channel downstream of I-880;
- construction of floodwalls in reach A (west bank) upstream of U.S. 101, in reach F upstream of SR 237, and in reach G;
- levee improvements through construction of levee raises in reaches A–F;
- replacement of the SR 237 eastbound bridge to match the westbound bridge profile;
- modification of stormdrain outfalls in reaches A, C, D, F, and G;
- improvement of maintenance access roads, construction of new depressed maintenance roads in reach G, and construction of maintenance road undercrossings at bridges;
- bridge scour protection;
- construction of an overflow weir in the Baylands;
- accommodation of future recreation trail extensions on levees in the Project Area;
- moderate to aggressive management of sediment and vegetation in reaches A–G; and
- levee maintenance.

Project Impacts

itional Flow Downstream of Project Area:

As currently proposed, the LGRP would contribute additional flow (additional depth and volume) downstream of the Project Area, into the Cargill salt ponds. If constructed, the project could also contribute increased depth and volume of floodflow over the marina parking area from the Guadalupe River, and the consequential increased risk of levee failure and flooding in the town of Alviso.

DFG Jurisdictional Habitats:

Implementation of the proposed project will directly affect both riparian and wetland vegetation from construction activities. Construction of flood improvements will directly affect approximately 2.16 acres of riparian habitat and 0.53 acres of aquatic habitats including fresh and tidal marsh and open water areas. Sediment and vegetation removal as part of flood improvements will affect approximately 1.97 acres of riparian habitat and 29.98 acres of aquatic habitats. See attached supplemental information for a summary of impacts on wetlands and vegetation for the proposed project.

Special-Status Species:

Within the LGRP area and downstream, 5 listed species and 4 species of concern either occur or have the potential to occur. The listed species are California clapper rail (*Rallus longinostris obsoletus*), western snowy plover (*Charadrius alexandrinus nivosus*), California least tern (*Sterna antillarum [=albifrons] browni*), salt marsh harvest mouse (*Reithrodontomys raviventris*), and the Central California coast steelhead. Of these listed species, only clapper rails have been observed in the LGRP area and are known to breed downstream of the project. Additional detail on listed species is included in the attachment.

The species of concern are saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), Alameda song sparrow (*Melospiza melodia pusillula*), burrowing owl, and southwestern pond turtle. Common yellowthroats and song sparrows have been identified in the LGRP area; however, because the various subspecies are difficult to distinguish in the field, it is unknown whether the individuals observed were the saltmarsh common yellowthroat and the Alameda song sparrow, both of which occur dowstream of Alviso area, or other subspecies.

California clapper rail. The California clapper rail is listed as endangered under both the federal and California ESAs. No rails were observed during site reconnaissance of the project site, and the clapper is not known to nest or forage in the project area or the Baylands mitigation site. Therefore, project construction is not expected to adversely affect the bird's habitat.

Western snowy plover. The coastal subspecies of western snowy plover is federally listed as threatened and state listed as a species of special concern. The salt ponds located downstream within the Baylands mitigation area potentially provide suitable nesting and foraging habitat. Construction of the project would increase the depth and duration of ponding in the salt ponds greater than existing conditions and may affect snowy plover breeding. Additional conservation measures employed by the district including pumping of the ponds would address this potential impact and ensure that the project does not adversely affect snowy plowers. See attachments for additional discussion.

California Least Tern. The California least tern is listed as endangered under both the federal and California ESAs, and has been observed foraging within the Baylands mitigation site by birdwatchers. Because the California least tern is not known to nest within the project site or the Baylands mitigation site, construction activity and operations-related effects of the proposed project would not impact this species, nor would increased water surface elevations potentially caused by the project impact the bird's foraging habitat.

Salt marsh harvest mouse. The salt marsh mouse is listed as endangered under both the federal and California ESAs, and is known to occur downstream of the project area. Small stands of pickleweed are present along the eastern edge of Pond A8W and would be affected by construction of the Alviso Weir and additional marginal habitat would be affected by additional flooding of salt ponds from LGRP operations. Downstream of the project site, salt marsh harvest mice populate New Chicago Marsh. This population is expected to benefit from proposed activities due to the reduction of overall flooding of New Chicago Marsh as a result of the proposed project.

ntral California coast steelhead. Rainbow trout have been reported in the LGRP area and reside in tributary streams, however extent of anadromy in the Guadalupe River watershed is unknown.

Saltmarsh common yellowthroat. The saltmarsh common yellowthroat is federally listed as a species of concern, and has been observed within the planning area. Observations were recorded in the marsh habitat south of reach G in the vicinity of the Alviso

Marina during reconnaissance-level surveys in March 2000.

meda song sparrow. The Alameda song sparrow is state-listed as a species of concern. The LGRP area may potentially provide nesting habitat for the sparrow, however, there is more suitable habitat downstream of the LGRP area. Due to the difficulty in identifying the Alameda song sparrow, it is unknown if observed song sparrows in the project area represent the Alameda song sparrow or other more common subspecies.

Western burrowing owl. The western burrowing owl is a federal species of concern, and has been found within the vicinity of the lower Guadalupe River. However, the project area does not provide suitable habitat for these species.

Southwestern pond turtle. The southwestern pond turtle is a federal species of concern and a state species of special concern. The project area would be a poor-quality aquatic and upland habitat, but there are potentially low-quality nesting spots along the undeveloped areas of the river's edge on the outside of the levees in isolated parcels adjacent to the LGRP area.

Baylands Mitigation Measure:

The proposed Baylands mitigation measure will result in some impacts to aquatic habitats as part of construction of the weir and changing the depth and duration of flooding in the Cargill salt ponds. The Baylands Mitigation Measures are being implemented to reduce downstream flooding impacts to the community of Alviso and the marina due to flood improvements. Construction of the measures, particularly the Alviso Weir, will result in increased depth and duration of flooding in the Cargill salt ponds which may affect listed species potentially present including snowy plover and salt marsh harvest mouse. Temporary pumps will be installed and operated after storms in the salt ponds to prevent permanent effects or loss of snowy plover breeding or foraging habitat.

The overflow weir has an estimated footprint of 4.3 acres, excluding temporary impacts, and will result in the loss of an estimated 0.13 acre loss of marsh vegetation and 2.46 acres of other waters associated with the salt pond. These numbers are included with the total impacts on wetlands and vegetation presented above under DFG Jurisdictional Habitat.

Mitigation

ditional Flow Downstream of Project Area:

The Baylands mitigation measure has been developed to reduce the impact of the additional flow downstream of the project area. The Baylands mitigation measure includes the construction of a west-perimeter levee around Alviso and the Alviso Slough overflow weir. Also, it includes the pumping of Cargill salt ponds after storm events and vegetation management from UPRR downstream to the overflow weir.

DFG Jurisdictional Habitat:

To mitigate the impacts of disturbing habitat as part of construction and from the proposed improvements, the District will replace or compensate for loss of riparian and wetland habitat. The District will provide 2:1 mitigation to compensate for permanent impacts on aquatic resources and 1:1 to compensate for temporary impacts. The District will provide 3:1 mitigation for impacts on riparian resources.

Special-Status Species:

Western snowy plover and salt marsh harvest mouse. Construction of the LGRP is expected to increase the depth and duration of inundation in the Cargill salt ponds which provide breeding and foraging habitat for western snowy plover and adjacent to known populations of salt marsh harvest mice. To mitigate for the potential impacts, the District will implement several measures including utilizing temporary pumps after storms to pump excess water from the ponds and minimize potential disturbance to habitat for snowy plover breeding and foraging and to adjacent harvest mice populations. The proposed project is anticipated to benefit salt marsh harvest mice by decreasing flood flows in New Chicago Marsh and preventing potential loss of known populations when major flooding occurs. Additional discussion on effects to listed species and mitigation measures is included in the attachment.

Anadromous Fish. To mitigate the impacts to anadromous fish, chinook salmon and steelhead, the District will implement an anadromous fish protection plan. Please see the attachment for additional detail protection measures for anadromous fish.

esting raptors and birds protected under MBTA . The District would perform pre-construction surveys to determine whether nesting birds, including raptors, are present in or immediately adjacent to the LGRP area. If an inactive nest is found, it will be removed prior to the start of the breeding season. If nesting raptors are observed, a buffer zone will be established around the nest. If possible, the District will delay construction activities until after the young have fledged.

Notification of Lake or Streambed Alteration
(Continued)

The District would attempt to remove other woody vegetation in fall through early spring to reduce effects on nesting birds.

See attached detailed project description for a discussion of project features.

X Continued on separate page(s)

Attachments/Enclosures

Attach or enclose the *required* documents listed below and check the corresponding boxes.

X Project description	X Map showing project location, including distances and/or directions from nearest city or town	□ Construction plans and drawings pertaining to the project

Attach or enclose the documents listed below and check the corresponding boxes.

Completed CEQA documents:	□ Negative Declaration	X Environmental Impact Report
	□ Notice of Exemption	
		□ Mitigated Negative Declaration
		□ Notice of Determination

Copies of applicable local, State, or federal permits, agreements, or other authorizations	X Local. *Describe:*	City of San Jose: Encroachment permits for drainage outfalls and bridge improvements
		City of Santa Clara: Encroachment permits for drainage outfalls and bridge improvements
		County of Santa Clara: Encroachment permit for work on Montague Expressway and at Alviso Marina
	X State. *Describe:*	Department of Transportation: Encroachment permits at SR 237 and U.S. 101
		State Lands Commission: State Lands lease
		San Francisco Bay Conservation and Development District: Development permit
		San Francisco Public Utilities Commission: Encroachment permit at pipeline crossing
		San Francisco Bay Regional Water Quality Control Board: Clean Water Act, Section 401 Water Quality Certification
		State Water Resources Control Board: Notice of Intent to comply with state's general permit for construction-related storm discharges
	X Federal. *Describe:*	U.S. Army Corps of Engineers: Clean Water Act, Section 404 Permit to discharge fill
		U.S. Coast Guard: Bridge permit

Making San Francisco Bay Better

PERMIT NO. 5-02

June 26, 2003

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, California 95118-3686

Ladies and Gentleman:

I. Authorization

On June 5, 2003 the San Francisco Bay Conservation and Development Commission, by a vote of 17 affirmative, 0 negative, and 0 abstentions, approved the resolution pursuant to which this permit is hereby issued:

A. Subject to the conditions stated below, the permittee, the Santa Clara Valley Water District, is granted permission to construct flood control improvements adjacent to Alviso Slough, downstream of the Union Pacific Railroad crossing of the slough, and in salt ponds A8W and A6, in the community of Alviso, in the City of San Jose, Santa Clara County. Authorized work includes the following:

In Salt Ponds:

1. In the levee of Salt Pond A8W along Alviso Slough, install an approximately 82,000-square-foot weir (1.88 acres, 1,000 feet long and 82 feet wide) constructed of concrete and rock;
2. Along the levee of Salt Pond A6, place a concrete, cellular mattress over 52,272 square feet (1.20 acres) to prevent continued erosion and down-cutting of the levee; and
3. In consultation with the U.S. Fish and Wildlife Service, place temporary pumps on an as-needed basis in Salt Ponds A6, A5, A7, A8D and A8W to regulate water levels within the salt ponds following high-water events.

In the Bay (a tidal marsh):

1. Within a 7,450-square-foot area of fill placed without BCDC authorization, remove approximately 4,000 square feet of the fill, but reconfigure the remaining portion of the fill as a 3,485-square-foot access ramp to allow equipment access to Alviso Slough for vegetation monitoring, debris removal and maintaining flood control improvements, and
2. Periodically mow tidal marsh vegetation and remove debris within an approximately 165,528-square-foot area to aid in conveying and directing flood flows from Guadalupe River to the weir.

Within the 100-foot Shoreline Band:

1. Place clean, imported fill to raise an approximately 2,850-foot-long section of the Alviso Slough levee by two to three feet while maintaining a 2 to 1 slope and a top width of 18 feet;

2. Following levee improvements, regrade the top of the Alviso Slough levee to provide a smooth, flat surface and ensure continued public access on the levee top;

3. Install a 65-foot-long section of flood wall immediately upstream of the UPR Bridge, and a 180-foot-long section of flood wall approximately one mile north of the UPR Bridge to raise the levee in these two areas;

4. Excavate 11,300 cubic yards of soil from a 152,460-square-foot (3.5 acres) area just east of the proposed weir to an elevation of approximately 6.89 feet NGVD (Mean High Water) to provide a stable foundation for the proposed weir, to aid in conveying flows to the weir, and to provide appropriate elevations to support tidal marsh vegetation. The excavated material shall be moved to a location outside of the Commission's jurisdiction; and

5. Install two public access interpretive signs along the Alviso Slough levee public access path.

B. This authority is generally pursuant to and limited by the application filed on April 18, 2003, including all accompanying and subsequent correspondence and exhibits, but subject to the modifications required by conditions hereto.

C. Work authorized herein must commence prior to November 1, 2003, or this permit will lapse and become null and void. All work must also be diligently pursued to completion and must be completed by November 1, 2006, unless an extension of time is granted by amendment of the permit.

D. The project will result in raising 2,850 linear feet of levee, installing an 82,000-square-foot overflow weir in a salt pond, placing a 52,272-square-foot concrete cellular mattress in a salt pond, placing a 3,485-square-foot equipment access ramp in an area of fill that was placed without Commission authorization and periodic mowing of marsh vegetation within a 165,528-square-foot area. To offset the project's tidal marsh impacts, a 152,460-square-foot upland area will be excavated to an elevation suitable for supporting marsh vegetation east of the overflow weir. These mitigation activities will result in a net increase of 3.5 acres of tidal marsh. Pond A4 is also being used for project mitigation for project impacts to wetlands located outside of the Commission's jurisdiction. Public access will consist of installing interpretive public access signs along the Alviso Slough levee and either purchasing a parcel of land adjacent to the levee and dedicating it for public access use or installing a pedestrian bridge over Alviso Slough, just downstream of the UPR bridge crossing or providing another public access amenity with similar benefits.

II. Special Conditions

The authorization made herein shall be subject to the following special conditions, in addition to the standard conditions in Part IV:

A. Specific Plans and Plan Review

1. **Plan Review and Approval.** No work whatsoever shall commence pursuant to this authorization until final precise site, engineering, grading and marsh restoration plans and any other relevant criteria, specifications, and plan information for that portion of the work have been submitted to, reviewed, and approved in writing by or on behalf of the Commission. The following specific drawings and information shall be submitted.

   Site, Engineering, Grading and Marsh Restoration. Site, engineering, grading and marsh restoration plans shall include and clearly label the Bay shoreline (edge of marsh vegetation up to the five-foot contour line above Mean Sea Level), the line 100 feet inland of the Bay shoreline, the typical and range of water levels of the salt ponds, property lines, grading, details showing the location, types, dimensions, and materials to be used for levee improvements, the overflow weir and other proposed improvements.

   Engineering plans shall include a complete set of contract drawings and specifications and design criteria. The design criteria shall be appropriate to the nature of the project, the use of any structures, soil and foundation conditions at the site, and potential earthquake-induced forces. Final plans shall be signed by the professionals of record and be accompanied by evidence that the design complies with all applicable codes; and evidence that a thorough and independent review of the design details, calculations, and construction drawings has been made.

   Plans submitted shall be accompanied by a letter requesting plan approval, identifying the type of plans submitted, the portion of the project involved, and indicating whether the plans are final or preliminary. Approval or disapproval shall be based upon:

   a. completeness and accuracy of the plans in showing the features required above, particularly the Bay shoreline (Mean High Water or the edge of marsh vegetation up to five feet above Mean Sea Level), property lines, and the line 100-feet inland of the Bay shoreline, and any other criteria required by this authorization;

   b. consistency of the plans with the terms and conditions of this authorization; and

   c. assuring that the fill to be retained for the equipment access ramp does not exceed the amount authorized herein.

   Plan review shall be completed by or on behalf of the Commission within 45 days after receipt of the plans to be reviewed.

2. **Conformity With Final Approved Plans.** All work, improvements, and uses shall conform to the final approved plans. Prior to any use of the facilities authorized herein, the appropriate design professional(s) of record shall certify in writing that, through personal knowledge, the work covered by the authorization has been performed in accordance with the approved design criteria and in substantial conformance with

the approved plans. No noticeable changes shall be made thereafter to any final plans or to the signage, levee or landscaping work without first obtaining written approval of the change(s) by or on behalf of the Commission.

3. **Schedule.** The plans shall include a schedule indicating when filling (overflow weir and mattress placement), excavation, grading and other activities will occur.

4. **Discrepancies Between Approved Plans and Special Conditions.** In case of any discrepancy between final approved plans and Special Conditions of this authorization, the Special Conditions shall prevail. The permittee is responsible for assuring that all plans accurately and fully reflect the Special Conditions of this authorization

B. **Mitigation and Restoration of Fill Area.** To offset the impacts to tidal marsh associated with the periodic mowing of marsh vegetation and the retention of 3,485 square feet of unauthorized fill to install an equipment access ramp, the permittee shall:

1. **Restoration Plan.** Prior to July 1, 2004 excavate a 152,460-square-foot (3.50 acre) upland area located just east of the weir and adjacent to Alviso Slough, and the remainder of unauthorized fill not used for the access ramp (approximately 3,485 square feet) to slightly below Mean High Tide. All excavation activities shall be shown on plans prepared and approved on behalf of the Commission pursuant to Special Condition II-A above and shall include a topographic map of the site in one-foot contours and a topographic map showing the proposed modifications. All elevations shall be relative to National Geodetic Vertical Datum (NGVD). The map shall include typical cross-sections showing proposed elevation of marsh plain, any channels, and any high spots. The plan shall show: (1) figures for the ratios of typical horizontal to vertical slopes for existing and proposed marsh surface, channels, and sloughs; (2) proposed plant species along the cross-sections according to their expected zone of growth; (3) the elevation of adjacent surrounding properties; and (4) the estimated tidal range related to Mean Higher High Water, Mean High Water, Mean Lower Low Water, Mean Sea Level, the maximum predicted tide, and the 100-year tide. To promote natural sedimentation and colonization of the site, constructed elevations shall generally be six to twelve inches below target elevations;

2. **Target Vegetation Coverage.** Prior to excavation activities, the permitee shall submit and receive Commission approval of a restoration plan for the excavated areas. The plan shall identify a suitable reference site that shall be evaluated as part of the monitoring program and shall provide a reference for evaluating the progress of the restoration site. The plan shall include the following vegetative cover criteria for the restored areas following excavation activities: Year 1-0% to 10%; Year 2-15% to 30%; Year 3-30% to 50%; Year 5-70% to 80%; Year 7-100%; and Year 9-100% and shall outline a schedule for the submittal of monitoring reports prepared pursuant to Special Condition II-B-3, below;

3. **Monitoring.** Monitor the excavated areas and report to the Commission on the success of creating tidal marsh habitat. The permittee shall submit a total of six monitoring reports by December 1 of year one, two, three, five, seven and nine following excavation or until the site is 80% vegetated with native, tidal marsh vegetation for two consecutive monitoring periods. The monitoring reports shall include photographs of the excavated areas and shall report on the percentage of the

site vegetated, plant survival, approximate percentage representation of different plant species and provide a qualitative assessment of plant growth rates. Undesirable exotic plant species such as pepperweed (*Lepidium latifolium*), *Spartina alterniflora*, broom, or star thistle shall be reasonably controlled (coverage of less than 5 percent of their expected zone of growth) during the nine-year monitoring period. Should adverse conditions or failure to meet the vegetative criteria outlined above be identified during the nine-year monitoring period, the permittee shall take corrective action as specified by or on behalf of the Commission. Corrective action could potentially involve planting the restored areas with native, tidal marsh plant species, additional excavation, grading, soil amendment or other measures the Commission determines are necessary to encourage restoration of the excavated areas.

C. **Public Access.** The permittee shall provide the following public access program:

1. **Levee Trail Closures.** For the duration of project construction, for those activities that interrupt or result in temporary closures to the public access path atop the Alviso Slough levee, the permittee shall provide, identify and clearly mark alternative public access routes around areas impacted by construction. The permittee shall make every effort to minimize closures and impacts to existing public access areas during project construction. The existing public access areas on the levee shall be open to the public after 5:00 p.m. and on weekends, whenever possible, and whenever truck traffic on the levees is light, unless it is determined by the permittee's construction engineer that the levee is unsafe for public use due to construction activities. In addition, signs shall be installed at all public access entrances informing the public of why the path is closed, when the path will be open, possible detours, and when project construction will be completed;

2. **Interpretive Signs.** By December 31, 2003, the permittee shall provide a minimum of two interpretive signs that provide information about marsh wildlife and functions or provide historical information regarding the community of Alviso. The content, style, size and location of the signs shall be subject to approval by or on behalf of the Commission pursuant to Special Condition II-A; and

3. **Parcel Acquisition or Pedestrian Bridge.**

   (a) **Public Access Area or Improvements.** Prior to November 1, 2004, the permittee shall acquire the parcel of land adjacent to the Alviso Slough levee (commonly referred to as the Catherine Street dock) and develops the area for public access use by grading it, if necessary, and installing a minimum of two benches, two trash receptacles and one public access interpretive sign. (This would be in addition to the signs required in Special Condition II-C-2, above.) The style, quantity, landscaping, path or plaza surfaces, park furniture and location of the public access improvements proposed for the acquired parcel shall be subject to approval by or on behalf of the Commission pursuant to Special Condition II-A. Installation of such improvements will require an amendment to this permit. The provision of public access at the Catherine Street dock property is contingent upon the permittee obtaining sufficient property interest in the parcel and purchase of the parcel is contingent upon approval by the permittee's Board of Directors. This condition shall not be construed as affecting any existing property interests in the Catherine Street dock property. If the permittee is unable to purchase the Catherine Street dock property, then, prior to November

1, 2005, the permittee shall provide a pedestrian bridge across Alviso Slough with a minimum width of twelve feet connecting the existing public access areas along the Alviso levees to either the Bay Trail configuration to the east or a public access path along salt pond A8 to the west. Installation of a pedestrian bridge over Alviso Slough will require further authorization by the Commission via amendment to this permit. If by June 1, 2004, the permittee has provided the Commission with sufficient evidence that acquisition of the Catherine Street dock parcel and installation of the pedestrian bridge are not feasible, then the permittee shall by November 1, 2006, develop and implement another public access amenity of equivalent benefit in consultation with local park and recreation departments, the San Francisco Bay Trail Project, and the Commission. Approval of the alternative public access area shall be based on factors including proximity to the Bay or salt ponds, connections to other public access, areas and trails safety and quality of the public access user's experience. Implementation of an alternative public access amenity will require an amendment to this permit, subject to approval by or on behalf of the Commission.

(b) **Permanent Guarantee.** By November 1, 2006 the permittee shall, by instrument or instruments acceptable to counsel for the Commission, dedicate to a public agency or otherwise permanently guarantee such rights for the public access area/amenity that is implemented pursuant to Special Condition II-C-3-(a), above. The instrument shall create rights in favor of the public which shall commence no later than after completion of construction of any public access improvements required by this authorization. Such instrument shall be in a form that meets recordation requirements of Santa Clara County and shall include a legal description of the property being restricted and a map that clearly shows the shoreline (Mean High Water Line or 5 feet above Mean Sea Level if marsh is present), the property being restricted for public access, the legal description of the property and of the area being restricted for public access, and other appropriate landmarks and topographic features of the site, such as the location and elevation of the top of bank of any levees, any significant elevation changes, and the location of the nearest public street and adjacent public access areas. Approval or disapproval of the instrument shall occur within 30 days after submittal for approval and shall be based on the following:

(1) Sufficiency of the instrument to create legally enforceable rights and duties to provide the public access area required by this authorization;

(2) Inclusion of an exhibit to the instrument that clearly shows the area to be reserved with a legally sufficient description of the boundaries of such area; and

(3) Sufficiency of the instrument to create legal rights in favor of the public for public access that will run with the land and be binding on any subsequent purchasers, licensees, and users.

(c) **Recordation of the Instrument.** Within 30 days after approval of the instrument, the permittee shall record the instrument on all parcels affected by this instrument and shall provide evidence of recording to the Commission. No changes shall be made to the instrument after approval without the express written consent by or on behalf of the Commission.

D. **Nonpoint Runoff.** The permittee shall ensure that all project-related runoff is in compliance with the non-point source water quality requirements of the RWQCB pursuant to the federal Porter-Cologne Act, the Clean Water Act, and the Coastal Zone Management Act. In addition, the permittee shall employ measures to minimize runoff from the site adversely impacting Bay water quality. Such measures shall include: (1) installing and maintaining silt fences; (2) diverting concentrated runoff around equipment and storage areas; (3) minimizing storage of construction materials on-site; (4) storing materials in a manner that limits exposure to rain and controls storm-water runoff; (5) using pallets for chemicals and bagged materials; (6) covering dumpsters with plastic sheeting at the end of each work day and during storms; (7) separating wastes and recycling or disposing of them properly; (8) regularly inspecting vehicles and equipment for leaks and maintaining them to prevent fluid leaks; and (9) using drip pans beneath equipment.

E. **Minimizing Construction Impacts:**

1. **Marsh and Upland Plant Protection.** Except as specifically authorized herein, the work authorized by this permit shall be performed in a manner that will prevent any significant adverse impact on any tidal marsh, other sensitive wetland resources, and existing upland and transitional habitat that is to be preserved or enhanced as part of the restoration project. If any unforeseen adverse impacts occur to any such areas as a result of the activities authorized herein, the permittee shall restore the area to its previous condition, including returning the disturbed area to its original elevation and soil composition and, if the area does not revegetate to its former condition within one year, the permittee shall seed or plant all disturbed areas with appropriate marsh vegetation after receiving approval of a restoration plan by or on behalf of the Commission pursuant to Special Condition II-A. Such restoration plan(s) must be implemented within one year of the initial disturbance. The permittee shall employ mitigation measures to minimize impacts to wetland areas, such as: (1) minimizing all traffic in marsh/mudflat areas; (2) restoring ruts tracks or other depressions or mounds caused by construction activities that would interfere with tidal circulation; and (3) carefully removing, storing, and replacing wetland vegetation that has been removed or "peeled back" from construction areas as soon as possible following construction.

2. **Construction Operations.** All construction operations shall be performed to prevent construction materials and excavated soils from falling, washing, or blowing into the Bay. In the event that such material escapes or is placed in an area subject to tidal action of the Bay, the permittee shall immediately retrieve and remove such material at its expense.

3. **Debris Removal.** All construction debris shall be removed to an authorized location outside the jurisdiction of the Commission and disposed at authorized sites. In the event that any such material is placed in any area within the Commission's jurisdiction, the permittee, its assignees, or successors in interest, or the owner of the improvements, shall remove such material, at its expense, within ten days after it has been notified by the Commission staff of such placement.

4. **Mud Waves.** The permittee shall implement reasonable measures to prevent the creation of mud waves as a result of project construction. Should the project result in the formation of a mud wave, the permittee shall remove the mud wave and, after

review and approval by or on behalf of the Commission pursuant to Special Condition II-A, implement measures to correct the conditions that led to mud wave formation.

F. **Notice to Contractor.** The permittee shall provide a copy of this permit to any contractor or person working in concert with the permittee to carry out the activities authorized herein and shall point out the special conditions contained herein.

G. **Recording.** The permittee shall record this document or a notice specifically referring to this document with Santa Clara County within 60 days after execution of the permit issued pursuant to this authorization and shall, within 60 days after recordation, provide evidence of recordation to the Commission.

H. **Creosote Treated Wood.** No pilings or other wood structures that have been pressure treated with creosote shall be used in any area that either is or will be subject to tidal action or any certain waterway, in any salt pond, or in any managed wetland within the Commission's jurisdiction as part of the project authorized herein.

I. **Responsibility for Flooding.** The Commission shall not be responsible for any flooding that may occur as a result of undertaking this project.

J. **Hold Harmless Agreement.** The permittee agrees to indemnify, defend, and hold harmless the Commission, its agencies, departments, officers, agents, and employees from any and all claims, demands, losses, or judgments accruing to or in favor of any person, firm, corporation, or entity who or whose property may be injured or damaged by work performed in accordance with the terms and conditions of this permit.

K. **Site Access.** The permittee grants permission to any member of the Commission's staff to conduct a site visit at the subject property during and after construction to verify that the project is being/has been constructed in compliance with the authorization and conditions contained herein. Site visits may occur during business hours without prior notice and after business hours with 24-hour.

L. **Certification of Contractor Review.** Prior to commencing any grading, demolition, or construction, the general contractor or contractors in charge of that portion of the work shall submit written certification that s/he has reviewed and understands the requirements of the permit and the final BCDC-approved plans, particularly as they pertain to any public access or open space required herein, or environmentally sensitive areas.

M. **Submittal of Biological Opinion.** Prior to the commencement of construction activities, the permittee shall submit evidence to the Commission that Biological Opinions from the National Oceanic and Atmospheric Administration-Fisheries Division and the U.S. Fish and Wildlife Service have been obtained for the project. All measures required in the Biological Opinions shall be implemented to avoid adverse impacts to fish and wildlife within the Commission's jurisdiction.

III. Findings and Declarations

This authorization is given on the basis of the Commission's findings and declarations that the work authorized herein is consistent with the McAteer-Petris Act, the *San Francisco Bay Plan*, the California Environmental Quality Act, and the Commission's amended coastal zone management program for San Francisco Bay for the following reasons:

A. **Bay Fill.** Section 66605 of the McAteer-Petris Act states, in part, that, "(a) Further filling of San Francisco Bay and certain waterways ... should be authorized only when public benefits from fill clearly exceed public detriment from the loss of the water areas and should be limited to water-oriented uses (such as ports, water-related industry, airports, bridges, wildlife refuges, water-oriented recreation and public assembly, water intake and discharge lines for desalinization plants and power generating plants requiring large amounts of water for cooling purposes) or minor fill for improving shoreline appearance or public access to the Bay; (b) That fill in the Bay and certain waterways ... for any purposes should be authorized only when no alternative upland location is available for such purposes; (c) That the water area authorized to be filled should be the minimum necessary to achieve the purpose of the fill; (d) That the nature, location and extent of any fill should be such that it will minimize harmful effects to the Bay Area, such as the reduction or impairment of the volume surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources...."; (e) That public health, safety and welfare require that fill be constructed in accordance with sound safety standards which will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions or of flood or storm waters; (f) That fill should be authorized when the filling would, to the maximum extent feasible, establish a permanent shoreline; and (g) That fill should be authorized when the applicant has such valid title to the properties in question that he may fill them in the manner and for the uses to be approved...."

The fill associated with the project consists of constructing an overflow weir and stabilizing and hardening portions of a salt pond levee. In addition, an equipment access ramp will be installed on a portion of fill placed without a BCDC permit in a tidal marsh adjacent to Alviso Slough. To construct the access ramp the permittee must demonstrate, and the Commission must find, that the ramp is a water-oriented use and that there is no alternative upland location for the ramp in addition to the findings of Sections 66605(c) through 66605(g) of the Act. To place the fill associated with the overflow weir and the concrete cellular mattress along the salt pond levees, the permittee must demonstrate, and the Commission must find, that the fill is consistent with the findings of Sections 66605(c) through 66605(g) of the Act.

While not expressly designated as a water-oriented use in the McAteer-Petris Act, the Commission has authorized the placement of small amounts of fill for flood control purposes in several low lying areas of the Bay Area, including along levees in the cities of Vallejo, Redwood City and Foster City in previous permits. The fill that will be retained to construct the access ramp is 3,485 square feet. The permittee has investigated the origin of the fill by researching historic aerial photographs taken of the area and while it is clear that this fill was placed after the Commission's creation, it is unclear who placed the fill and how long the fill has been at this location. The permittee states that the access ramp is an integral part of the flood control project because it will allow access to a vegetation management area that needs to be periodically mowed and cleared of debris to adequately convey flood flows to the weir. There is no alternative upland location for the ramp because the ramp needs to be located adjacent to the management area and must provide vehicle access into the marsh lands. Other locations were investigated for the ramp but it was determined that placing it at another location would result in additional tidal marsh impacts because fill would be placed in undisturbed marsh areas. The location of the ramp was selected to minimize the area of marsh traversed by equipment and to limit as much as possible vehicle movement to those areas that would

be disturbed by mowing or debris removal. The permittee has designed the ramp so its dimensions are the minimum width and slope needed for safe equipment passage. To mitigate the impacts associated with the fill for the access ramp, the permittee will remove the remainder of unauthorized fill and will excavate an upland area located adjacent to the weir to depths appropriate for the establishment of tidal marsh vegetation.

With regard to fill in salt ponds, the permittee's engineering analysis indicates that the dimensions for the overflow weir and the concrete cellular mattresses along the salt pond levee are the minimum amount necessary to establish stable structures to convey flood flows while requiring minimum maintenance. The structures will occupy a total of 3.08 acres along the salt pond levees and implementation of the project will result in flood water entering the salt ponds periodically. However, the fill is largely limited to existing salt pond levees – no fill will be placed within the water portion of the ponds, except for a 13,068-square-foot portion of a cellular mattress in salt pond A6 needed to prevent further erosion of the levee. To minimize impacts to wildlife that utilize the salt ponds, the permittee will coordinate with the USFWS to maintain optimum water levels for wildlife using temporary pumps when necessary to adjust water levels in the ponds. In addition, Special Condition II.M. has been included in this authorization. This Special Condition requires the permittee to submit evidence to the Commission that all Biological Opinions from the NOAA Fisheries and the USFWS have been issued for the project, prior to the commencement of construction activities. In addition, this condition requires the permittee to implement all measures required in the Biological Opinions to avoid adverse impacts to fish and wildlife within the Commission's jurisdiction. Lastly, the permittee states that the fill associated with the project is necessary to protect the residents in the area from flooding and has been designed by engineers to meet all standards of safety for geologic and flood concerns.

The Commission finds that there is no alternative upland location for the equipment access ramp because the levee slope of 2:1 is too steep to safely move heavy equipment up and down the slope, and that to minimize disturbance of marsh areas, the ramp should be located adjacent to the marsh area that will be mowed and cleared of debris to minimize impacts on undisturbed tidal marsh. In addition, the Commission finds that retention of the unauthorized fill necessary for ramp construction will be offset by removing the remainder of the unauthorized fill and excavating a 3.5 acre upland area to an elevation suitable for tidal marsh establishment. Lastly, the Commission finds that the impacts associated with the fill in the salt ponds will be mitigated by coordinating with and implementing the recommendations of the USFWS and by limiting the fill to predominately the salt pond levees. For these reasons, the Commission finds that the project is consistent with the McAteer-Petris Act and the Bay Plan policies on fill.

B. **Salt Ponds.** The Bay Plan findings and policies on salt ponds and other managed wetlands state, "[t]he salt ponds are an economically important and productive use of the water of the Bay..." and "...[a]s long as is economically feasible, the salt ponds should be maintained in salt production...in addition, the integrity of the salt production system should be respected...." The salt pond policies go on to state, "...despite these provisions, if the owner of the salt ponds or the owner of any managed wetland desires to withdraw any of the ponds or marshes from their present uses, the public should make every effort to but these lands, breach the existing dikes, and reopen these areas to

the Bay. This type of purchase should have a high priority for any public funds available, because opening ponds and managed wetlands to the Bay represents man's last substantial opportunity to enlarge the Bay rather than shrink it...."

In evaluating the project's consistency with the Bay Plan's Salt Pond policies, the analysis must be framed in the context that the affected ponds, as well as many of the surrounding salt ponds, have been sold to USFWS and the Department of Fish and Game to be eventually managed as wildlife habitat.

The permittee has stated that currently, excess flood flows enter salt ponds A8W and A6 during heavy storms. The permittee will formalize this flood flow route by installing hardened flow control and levee stabilization structures. The permittee states that the flood improvements will occur primarily along the salt pond levees while some armoring will occur below the water surface at pond A6 where the levee is currently eroding. The pond bottom where armoring will occur in pond A6 is considerably lower than the average level of the pond where salt is harvested and has historically served as a borrow area for construction and maintenance of the salt pond levees. The fill that will be placed in salt pond A6 would prevent further erosion and down-cutting of this salt pond levee and will ensure that excess flood flows would be contained within this pond. The area where fill will be placed in salt pond A8W has also eroded due to flood flows. Installation of the weir will harden the salt pond levee and ensure that flood flows are directed and remain in the salt ponds while minimizing flooding potential in nearby populated areas. The permittee states that the project will have a negligible affect on the salt production capacity of the system because: (1) such flood flows have adversely been entering these ponds for a number of years without an appreciable effect on salt production; and (2) while these flood flows dilute pond salinity, these ponds are managed as low salinity ponds currently, and will soon be taken out of salt production to be managed for wildlife habitat.

As noted above, the flood improvements will be constructed in salt ponds that have been acquired by the USFWS and will be managed for wildlife habitat. In a letter dated July 3, 2002, to the Santa Clara Valley Water District from the Refuge Manager, it states that, "[b]ased on ... meetings and ...letters...we [referring to the USFWS] believe there are no significant incompatibilities between both interim and long-term restoration [of the salt ponds along Guadalupe Slough] and flood control objectives...." The letter goes on to state that "...we believe [referring to the USFWS] the pond modifications that were recommended to maintain the Cargill salt production system would be applicable to the Refuge's management of the ponds during the interim restoration phase and probably when the area is fully restored to a combination of tidal marsh and managed saline ponds...." The letter further states "...we would like the flood waters to be confined in as few ponds as possible. We would like these ponds to be returned to their previous condition as soon after the flood event as possible. Our highest priority would be to have Pond A8D dry enough to serve as nesting habitat for snowy plovers...."

The flood control improvements will aid in accomplishing at least two of the conceptual goals and features that have been identified in preliminary restoration plans (Siegel, Bachand 2002) for the salt ponds including: (1) providing open water ponds; and (2) installing and maintaining flood control structures that protect urban areas from tidal flooding. In addition, the permittee will use temporary pumps in various salt ponds, including salt pond A8D, to remove excess water from the ponds.

The Commission finds that construction of the flood control improvements will not have a substantial effect on the overall salt making system because the improvements will largely occur along the salt pond levees, thereby not appreciably decreasing the volume of water in the ponds, and not changing the current situation where flood water flows into these salt ponds. In addition, the Commission finds that the flood control improvements will not impair the interim and long-term plans for converting the salt ponds to wildlife habitat, a conversion supported by the Bay Plan's salt pond policies. For these reasons, the Commission finds that the project is consistent with the Bay Plan policies on salt ponds.

C. **Public Access.** Section 66602 of the McAteer-Petris Act states that, "...existing public access to the shoreline and waters of the San Francisco Bay is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided...." In addition the Bay Plan policies on public access state, "...[a] proposed fill project should increase public access to the Bay to the maximum extent feasible...." In assessing whether the public access improvements are consistent with Commission law and policy, the Commission must consider whether there is a reasonable relationship between a permit condition and the impact or burden created by a development project. In this case, the Commission should evaluate the impact of the project on existing public access facilities and the demand on public access facilities that will be generated by the potential increases in population arising from completion of the flood control improvements.

The project will result in temporary trail closures for up to four months. Special Condition II-C-1 has been included in this authorization to ensure that public access impacts as a result of trail closures are offset by requiring the permittee to provide and sign alternate public access routes and to provide detours during those times that construction interrupts access on the levees.

In addition to the temporary impact of trail closures, the project is part of the overall Lower Guadalupe River Project which, in turn, has been designed to accommodate increased flows generated by two other flood control projects occurring upstream in the City of San Jose. While the Lower Guadalupe River Project has been designed to contain current flows, it has also been designed to contain projected flows of up to 18,350 cubic feet per second, approximately 4,350 cubic feet per second above current capacity. Therefore, the project has been designed to accommodate future water conveyance in the Cities of San Jose and Santa Clara which directly correlates to future development in these areas. Future development in the cities of San Jose and Santa Clara and the corresponding increase in population will likely increase the demand on current public access facilities in the area. To offset the potential impacts of increased flood control and its implications for future development, Special Conditions II-C-2 and II-C-3 have been included in this authorization. These special conditions require the permittee to install interpretive public access signs along the Alviso Slough levee by December 31, 2003 and to either provide public access on an acquired parcel located adjacent to the existing public access path or provide a pedestrian bridge across Alviso Slough. If both of these options are determined to be infeasible, then the permittee is required to provide an alternate public access proposal subject to review and approval by the Commission.

The Commission finds that, as conditioned, the project, will not significantly impair current public access during construction activities and that future impacts to public access as a result of increased development that can be reasonably anticipated as a result of providing improved flood protection will be offset by implementing Special Conditions II-C-2 and II-C-3. Therefore, the Commission finds that the project will provide maximum feasible public access, consistent with the project, as required by the McAteer-Petris Act and the Bay Plan policies on public access.

D. **Tidal Marshes.** The Bay Plan policies on tidal marshes and tidal flats state that, "[t]idal marshes and tidal flats should be conserved to the fullest possible extent. Filling ... projects that would substantially harm tidal marshes or tidal flats should be allowed only for purposes that provide substantial public benefits and only if there is no feasible alternative...Any proposed fill...should be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats and be designed to minimize harmful effects...." In addition, the policies state that, "[w]here and whenever possible, former tidal marshes and tidal flats that have been diked from the Bay should be restored to tidal action in order to replace lost historic wetlands...."

As described above, the permittee will install an access ramp on a 3,485-square-foot portion of fill that was placed without a BCDC permit. Only that portion of the fill needed to provide a ramp for equipment to safely access a section of marsh that will be regularly mowed and cleaned of debris, will be retained; the remaining part of the unauthorized fill will be removed. The permittee contends that installation of the ramp in this location and vegetation maintenance is an integral component of the flood control project. Without periodic mowing of a 165,528-square-foot (3.80 acres) area of marsh vegetation, the permittee states that flood water will be impeded and will not be adequately directed to the weir and could result in flooding. The permittee further states that installation of the ramp is necessary to gain access for equipment to mow the vegetation and to remove accumulated debris. To offset impacts to tidal marsh from constructing the ramp and from periodic disturbance to the 165,528-square-foot area of marsh that will be regularly mowed, the permittee will restore tidal marsh in a 3.5 acre-area that is currently upland habitat immediately adjacent to the proposed weir. The area will be restored to elevations suitable for the establishment of tidal marsh. To ensure that construction activities will not result in additional, unintended adverse effects to tidal marsh, Special Conditions II-E-1 through II-E-4 have been included in this authorization. These conditions require the permittee to remove all construction debris to a location outside of the Commission's jurisdiction and to restore any marsh habitat inadvertently impacted during construction activities.

The Commission finds that the potential impacts associated with the periodic mowing of marsh vegetation and the installation of an access ramp in an area of unauthorized fill will be offset by restoring tidal marsh to a 3.5 acre area. In addition, the Commission finds that the ramp and the periodic maintenance of vegetation is necessary to ensure the overall function of, and to maintain the flood control improvements. Therefore, the Commission finds that the project is consistent with the Bay Plan policies on tidal marshes.

E. **Review Boards.** Neither the Design Review Board nor the Engineering Criteria Review Board reviewed the project because the project will not involve substantial public access improvements at this time nor the placement of substantial structures on fill that will

affect public safety. The Design Review Board may review the future public access proposal.

F. **Environmental Review.** The Santa Clara Valley Water District, the lead agency for the proposed project, prepared, circulated, and on October 28, 2002, certified an Environmental Impact Report for the project.

G. **Conclusion.** For all the above reasons, the Commission finds, declares, and certifies that, subject to the Special Conditions stated herein, the project authorized herein is consistent with the *San Francisco Bay Plan*, the McAteer-Petris Act, the Commission's Regulations, the California Environmental Quality Act, and the Commission's Amended Management Program for the San Francisco Bay segment of the California coastal zone.

IV. Standard Conditions

A. All required permissions from governmental bodies must be obtained before the commencement of work; these bodies include, but are not limited to, the U. S. Army Corps of Engineers, the State Lands Commission, the Regional Water Quality Control Board, and the city and/or county in which the work is to be performed, whenever any of these may be required. This permit does not relieve the permittee of any obligations imposed by State or Federal law, either statutory or otherwise.

B. The attached Notice of Completion and Declaration of Compliance form shall be returned to the Commission within 30 days following completion of the work.

C. Work must be performed in the precise manner and at the precise locations indicated in your application, as such may have been modified by the terms of the permit and any plans approved in writing by or on behalf of the Commission.

D. Work must be performed in a manner so as to minimize muddying of waters, and if diking is involved, dikes shall be waterproof. If any seepage returns to the Bay, the permittee will be subject to the regulations of the Regional Water Quality Control Board in that region.

E. The rights, duties, and obligations contained in this permit are assignable. When the permittee transfer any interest in any property either on which the authorized activity will occur or which is necessary to the full compliance of one or more conditions to this permit, the permittee/transferor and the transferee shall execute and submit to the Commission a permit assignment form acceptable to the Executive Director. An assignment shall not be effective until the assignee executes and the Executive Director receives an acknowledgment that the assignee has read and understands the permit and agrees to be bound by the terms and conditions of the permit, and the assignee is accepted by the Executive Director as being reasonably capable of complying with the terms and conditions of the permit.

F. Unless otherwise provided in this permit, all the terms and conditions of this permit shall remain effective for so long as the permit remains in effect or for so long as any use or construction authorized by this permit exists, whichever is longer.

G. Unless otherwise provided in this permit, the terms and conditions of this permit shall bind all future owners and future possessors of any legal interest in the land and shall run with the land.

H. Unless otherwise provided in this permit, any work authorized herein shall be completed within the time limits specified in this permit, or, if no time limits are specified in the permit, within three years. If the work is not completed by the date specified in the permit, or, if no date is specified, within three years from the date of the permit, the permit shall become null and void. If a permit becomes null and void for a failure to comply with these time limitations, any fill placed in reliance on this permit shall be removed by the permittee or its assignee upon receiving written notification by or on behalf of the Commission to remove the fill.

I. Except as otherwise noted, violation of any of the terms of this permit shall be grounds for revocation. The Commission may revoke any permit for such violation after a public hearing held on reasonable notice to the permittee or its assignee if the permit has been effectively assigned. If the permit is revoked, the Commission may determine, if it deems appropriate, that all or part of any fill or structure placed pursuant to this permit shall be removed by the permittee or its assignee if the permit has been assigned.

J. This permit shall not take effect unless the permittee executes the original of this permit and returns it to the Commission within ten days after the date of the issuance of the permit. No work shall be done until the acknowledgment is duly executed and returned to the Commission.

K. Any area subject to the jurisdiction of the San Francisco Bay Conservation and Development Commission under either the McAteer-Petris Act or the Suisun Marsh Preservation Act at the time the permit is granted or thereafter shall remain subject to that jurisdiction notwithstanding the placement of any fill or the implementation of any substantial change in use authorized by this permit.

L. Any area not subject to the jurisdiction of the San Francisco Bay Conservation and Development Commission that becomes, as a result of any work or project authorized in this permit, subject to tidal action shall become subject to the Commission's "bay" jurisdiction.

M. Unless the Commission directs otherwise, this permit shall become null and void if any term, standard condition, or special condition of this permit shall be found illegal or unenforceable through the application of statute, administrative ruling, or court determination. If this permit becomes null and void, any fill or structures placed in reliance on this permit shall be subject to removal by the permittee or its assignee if the permit has been assigned to the extent that the Commission determines that such removal is appropriate. Any uses authorized shall be terminated to the extent that the Commission determines that such uses should be terminated.

Executed at San Francisco, California, on behalf of the San Francisco Bay Conservation and Development Commission on the date first above written.

WILL TRAVIS
Executive Director
San Francisco Bay Conservation and
Development Commission

By: _____
ROBERT J. BATHA
Chief of Permits

RJB/MBL/ra

cc: U. S. Army Corps of Engineers, Attn: Regulatory Functions Branch
San Francisco Bay Regional Water Quality Control Board,
Attn: Certification Section
Environmental Protection Agency, Attn: Mike Monroe-WTR-8

* *

Receipt acknowledged, contents understood and agreed to:

Executed at San Jose, CA

_____ for Dave Chesterman
Applicant

On July 1st, 2003

By: DAVE CHESTERMAN

WATERSHED MANAGER
Title